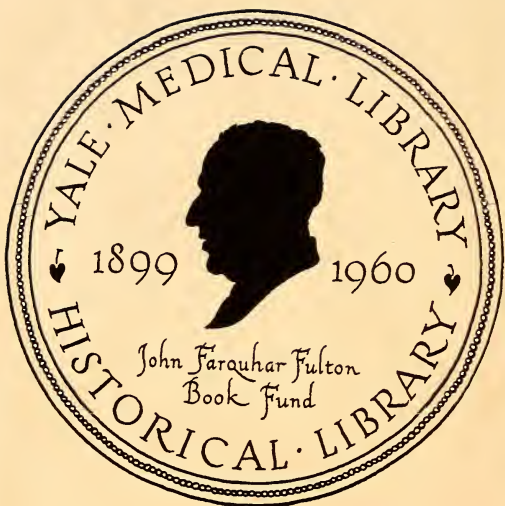


HEADACHES
AND HOW TO PREVENT THEM

RILEY



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BATTLE CREEK, MICHIGAN
GOOD HEALTH PUBLISHING CO.
1916

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Foreword

This book is written for the multitude of people who have headaches — occasional, periodic, or frequent attacks. It shows that the best cure is to be found in correct habits of living, and that in a large proportion of cases such a drugless cure is possible. Technical terms are avoided; simple language is used so that the average person can read understandingly. There is very little of anatomy or physiology in these headache talks. The writer hopes that young people in their teens will find a leading in these pages to guide them in the way of such wholesome living that they may escape the headache bane, and he knows that by following the suggestions in this little book many sufferers will be able to overcome their chronic headache distress.

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CHAPTER I

Pain in General

First, we want to understand about the nature of pain, and it is only fair to give this devil his due, by admitting that pain is really a beneficent sensation, because it comes as a warning that something is wrong somewhere in the bodily economy. If the warning is heeded, serious damage can be averted. Almost ninety per cent of all diseases either begin with, or have at some time, pain as a prominent symptom. Take toothache, for instance: If the nerves and tissues of the teeth did not rebel, decay and disease would go on until the teeth were beyond saving; poisons from them would spread to remote parts of the body and we should be not only toothless but seriously disabled. Note what a lot of suffering a sharp attack of toothache saves us, by sending us to the dentist at the beginning of trouble, when things can be made right.

Pain cannot be strictly defined. One writer, sixty years ago, said that "pain is a disagreeable

sensation that cannot be defined." Most of us will admit that this truly indefinite definition is not a bad description of our personal experiences.

The reason pain is so difficult to define is because it is a distinctly mental interpretation of some abnormal, and generally harmful, process which is going on in the body. Dr. Richard J. Behan says: "Pain cannot be classed as a sensation, but rather it is the result of the perception and interpretation of sensation by the mind." Sudduth says that "pain is a mental state, an element of consciousness, due to the perception of an injury to the body or to the feelings."

Spinoza and Schopenhauer both argue that pain is an emotion whereby the body's power of activity is diminished or checked.

As we read farther into the past, we see that the physical properties of pain were not perceived and that the metaphysical side was the one considered, while the modern research workers add that this disagreeable sensation is the result either of lessened nutritive activity in the nerve cells or is an indicator of destructive agents at work in the body. Pain is thus a combination of the mental and physical.

Pain Is Penalty

The whole world suffers, and so all languages have a word to express pain. The English lan-

guage takes its name from the middle English, a term used to express the idea of suffering. This word, like the similar one found in all modern languages, was doubtless derived from the Latin *poena*, which means a punishment, and back of that derivation is the Greek word which also means punishment or penalty.

When we stop to think that pain is due to some break or incoördination of Nature's perfect laws, and that the breaking of the laws is largely due to man's ignorance or willfulness, we see that the meaning of the word is appropriate. Breakers of hygienic, as well as of civil, law are in the line of punishment—should they not expect to pay the penalty?

The Distribution of Pain

This disagreeable sensation is distributed in nearly all parts of the body. The attacked area may be small or large—a tiny spot, or the whole body may be pain racked.

The distributor of pain consists of the system of nerve fibers that form a network of sensitive tissue throughout the body. The nerve fibers vary in size—they are as fine as threads, or finer, and like strings, or like heavier cord, or in a bundle the size of a clothes line as found in the spinal cord, which is enclosed by the back bone. All these nerve

fibers join the spinal cord or brain at some point, and the spinal cord enters the brain.

In the brain are located the nerve centers — the sense-perceptive centers. Anything that stimulates or irritates the sensory nerves as they go from the special terminals to the sense centers will be transmitted back to the terminals and felt as pain. Various agents act upon the nerves to produce pain: Heat, cold, electricity, pressure, injury, toxemias, anemia, congestion, chemical poisons — all these will cause pain.

The Intensity of Pain

The severity of pain depends upon several conditions: (1) the location and irritability of the nerves affected — the nerves of the eye are peculiarly sensitive and capable of excruciating pain; (2) the extent of the nerve fibers involved — that long bundle of fibers in the sciatic nerve makes sciatica a severely painful symptom; (3) the sensitiveness of the individual — there are some people who are said to be “good pain-bearers” because of their ability to endure pain.

Pain in the Head

Pain in the head is commonly called headache and is the most common bodily discomfort; more than any other, it incapacitates one for the usual

daily routine. Often we hear this remark: "I can bear any pain better than a headache." It is possible to temporarily forget much pain elsewhere, and to work, read, and occupy oneself in various ways. When the head feels sick, the whole body is "out of commission," and the world is a grievous place.

Headache is a symptom — not a disease — and is especially helpful because it usually registers trouble in the organs and parts of the body where the nerves of sensation do not localize pain.

People know better, but many have a queer, subconscious idea that each member or organ of the body is quite by itself and not part of the whole body, all intimately connected. If the arm pains, or the knee aches, or if there is a pain in the side, some local remedy is demanded because one's mind immediately fixes on that spot as the seat of the trouble. Here is a case of congested headache due to cramped, tired feet that are poorly shod in narrow, high-heeled boots, but it is hard for a woman to believe that the headache is a reflex symptom from the mal-treated foot.

Where the Head Aches

The majority of headaches are located in the front of the head, but any part of the head may be the seat of pain, or the ache may be diffused

over the greater part of the cranium. The knowledge of the location of the headache is of value in determining the cause that produced it, although we cannot say with absolute certainty that a headache resulting from any particular cause will always be located in the same part of the head.

Headaches due to eye strain are usually located just above the eyes or in the temporal region, and the indigestion or constipation headache is in the forehead and front of the head, sometimes reaching to the top of the head. Those caused by disturbances of digestion are also sometimes in the lower and back part of the head in the occipital region.

Headaches caused by irritation or disease of the pelvic organs are often located in the back and lower part of the head; the headache of neurasthenia is very often diffused all over the head — it may be in the front or in the occipital region of the head, or again it may be found on top of the head in the form of pressure — the so-called “helmet” symptom, because of its resemblance to pressure from a helmet placed upon the head.

The headache of hysteria is often located in a spot on top of the head — as the so-called “clavus hystericus.” Headaches due to psychic influences are usually found in the front part of the head, or again they are quite generally diffused. “Toxic”

headaches, due either to poisons taken from without or to poisons generated within the body, are usually located in front of the head and are sometimes diffused over a large area.

CHAPTER II

Preventable Headache

As headaches are related to diseases of the eyes, ears, nose, throat, teeth, and other parts of the body, it is obvious that only proper medical or surgical treatment can cure some headaches. Then too, morbid states of the blood, serious kidney, digestive and sexual diseases and changes of brain structure cause such headaches that only a physician can treat. Nevertheless, it is not too much to say that a large per cent of the world's headaches are preventable.

A Need of Pure Air

Preventable headaches in this instance are those that are easily preventable by common sense in avoiding careless habits in sitting, reading and working. Headaches are often due to crowded, ill-ventilated public places, school rooms, business places, department stores, moving-picture theatres, etc.

In this connection we may include the homes

where fresh air is not a matter that receives the attention it deserves. How many women there are who do housework, especially in heated kitchens, where the air is breathed over and over again. The flushed face, tiredness, and aching head, are not always due to the work about the hot stove, or the amount of hard work, but to the vitiated atmosphere in which the work is done. To open the windows frequently and change the air, will prevent such headaches. Ten minutes out of every hour the windows should be opened for fresh air.

Now that the public health rules are so well enforced, our schools, industrial plants and public buildings are not such breeding places for disease as formerly, but we must continually battle for more sunshine and fresh air surroundings. It is not over-stating it to say that our homes are the poorest ventilated of all structures; as a matter of fact, it is not the buildings, after all, that require ventilating, but *people*. The oxygen of fresh air is food and life to us. Headaches are often a symptom of the abused bodies crying for oxygen. The headaches of suffocation are easily prevented by the application of a little common sense, and open windows. Drafts — colds — shivers — are suggested to many people with the advice to open the windows. But "shivers" do not only go with colds — they accompany the nervous, poi-

soned condition due to a lack of oxygen and the presence of poisonous gases; and in any case, the most delicate of us can have ventilation by windows properly arranged.

There are many devices for ventilating house rooms, but the cheapest and easiest to obtain is the six inch board to fit beneath the lower window sash. This allows the air currents to pass between the upper and lower sash without subjecting the occupants of a room to drafts. The window boards can be stained, or painted, to match the wood trimmings, so they are not unsightly. Because they are such first-class aids to ventilation, they are strongly recommended as a preventive for the headaches caused by vitiated air in houses. Over-heated rooms, with or without ventilation, are a frequent cause of congestive headaches.

Sit Straight

Bad postures in sitting cause headaches. When one sits in a slouched position, the blood stagnates in the large abdominal blood-vessels because free circulation is impeded. The blood is kept from the brain and held in the pelvis by the weight of the tissues that sag and bear down upon the abdominal vessels, and they are a reservoir for the blood that should be freely circulating through all the arterial pipes. This condition causes a tem-

porary brain anemia, and this lack of blood in the brain causes a stupid, dull headache. Sit erect, keep the lungs full of air, do not slouch or lounge in your chair over book, sewing, or work, and thus prevent headaches that come from a bad sitting position.

Reading on Trains

Then there is the headache from reading on moving trains and trolleys, caused partly from bad air and partly from eye-strain. It is obvious that such headaches confess to individual folly. Then there are headaches due to strain on the eyes because the muscles or refractive power of the eyes are faulty. These headaches can only be cured by going to an oculist and having the eyes fitted to correct glasses, or otherwise treated as the health of the eye demands. This is not the sort of eye headache to which reference is here made as easily preventable.

It is one of the most difficult things to impress people generally with the importance of treating the eyes well. The eyes are very much abused. Reading under difficulties, as in a train, or in a dim, waning light, or with a light shining into the eyes and striking glaringly on the printed page is very injurious to the eyes, and causes bad headaches. These headaches are usually situated in the fore-

head, temples, and even the eye-ball. There is a feeling of weight in the eyes. Eye-strain causes a feeling of general tiredness all over the body. This is not strange when we consider that the retina of the eye which receives all sight impressions is really a spreading out of the optic nerve; the optic nerve is very short and is practically a projecting forward of brain tissue. When we strain or abuse the optic nerves (eyes) we are directly mistreating the brain.

Diffused Light

In reading, the light should be diffused from above, or fall over the left shoulder. Brilliant electric light, or an unshaded welsbach, has an irritating effect upon the eyes and causes headaches. A reading lamp that gives a soft, steady glow is best for reading and writing. Nothing has ever been found better than the old "student lamp," as far as quality of light and eye comfort are concerned.

Reading in Bed

A great deal is said about the bad habit of reading in bed or when reclining on couches, in hammocks, etc. If the light is correctly adjusted, and of proper quality, and if the body is propped so that the reading matter is adjusted to the correct

angle of vision — just as when one sits in the correct reading position — it is very restful to read in bed. We recall the happy hours of reading and writing in bed recorded by Robert Louis Stevenson, Mark Twain and many others. When the body is relaxed, and a sensation of comfort is produced, the mind is more easily concentrated for reading. But first be sure there is no sort of strain put on the tissues or the muscles of the eyes.

CHAPTER III

Some Reasons Why Women Have Headaches

Women suffer much more from headaches than men, and unhygienic clothing is often the reason for this. Interference with the free circulation of the blood produces headaches. Nobody will deny that body protection and comfort is the primary object of clothing, however far it falls short of its original purpose.

It is a despoiling of the health and comfort of youth, when mothers allow or urge their growing daughters to wear corsets and high-heeled shoes. Unhygienic clothing disasters have their beginning here.

Boys escape the constricting clothing that American girls wear. Early childhood, too, is fortunate in this respect, except in cases where, in winter, babies are swaddled and muffled to the point of immobility and suffocation, and even in summer are burdened with clothing. Generally, little children's clothing is comfortably loose and the feet properly dressed.

Not until girls discard the broad shoe with the one lift sole and begin to wear the peculiarly feminine foot clothing is there any bad feature in their style of dress. From then on, the most serious and far-reaching trouble begins.

Since we are concerned only with that side of dress that has to do with healthfulness, shoes, corsets and collars are the three things that are especially obnoxious—we can even say “noxious,” because by these three articles of dress, poisons are aided and abetted in doing destructive work in the body and are headache producers.

Women's Footwear

The shoes of boys and men serve their purposes; they are sufficiently correct in shape to be hygienic. A man would appear conspicuously ridiculous in other than the wide, low-heeled shoe. A woman's feet are supposed to serve the same purpose as do man's (and the health of her special pelvic organs demands the normal position of the body even more) so why should she consider the same style of footwear unsuitable in her case? But she does, and in order to get a “neat and elegant” appearance, she tortures and deforms her feet and, in truth, pays with her life's blood the price for being daintily shod.

To all who see things as they really are, the

average woman's foot is a poor, deformed thing, as unsightly as a hump on her back, or a pitifully twisted face—more so, because she deliberately foists it upon herself through her vanity.

While the shops are full of hideously fashionable shoes, the common-sense woman's shoe can always be bought if one chooses—and there are a great many women who do insist upon keeping their feet shaped as God made them.

The athletic woman, young or old, who wears tennis, gymnasium, golfing and tramping shoes for hours every day finds it so uncomfortable to change to dress and evening shoes, that she is quite likely, at last, to adopt the sensible shoe, which is really handsome because it is normal; there is no beauty or grace apart from natural lines.

What the Foot Does

How does a pointed, narrow, high-heeled shoe affect the health? The statement that such shoes are paid for in blood was made because the feet have such important work to do, because the normal functions of the organs of the body, and even of the brain itself, depend upon unhampered blood circulation and mechanical efficiency of the feet. The foot does two things—it acts as a support for the weight of the body and as a lever to raise and move it. It is so constructed as to allow elasticity

under pressure, and a change of position under strain, which protect it from injury.

The average woman's shoe allows of very little elasticity or change of position — the foot is tightly bound and cramped. When the foot is used as a passive support for the body, it is a patent arch, the weight resting on the two ends. During walking, as the weight is borne on the ball of the foot, the center of the arch is depressed, but becomes patent again when the weight is passed forward to the toes. This change gives a spring effect which relieves the pressure on the skin, blood-vessels, nerves and other structures under the arch. When the toes are called on to bear the weight and supply the force that propels the body forward, they spread apart, and this spreading helps restore the arch.

A Normal Foot Is Rare

Without going farther into the anatomical and mechanical description of the foot, one can easily understand how impossible it is for the foot to perform its functions normally and fully when incased in the women's shoes commonly worn; of course there are mis-shapen toes, bunions, corns, broken arches, weak ankles and the aches and pains that go from the feet to the spine and the head. It is so unusual in hospitals or sanitarium (or in any place where the bared feet are much in evi-

dence), to see a well-shaped, normal woman's foot that it is a matter of note when patients' feet are not deformed in some way.

The Plumb Line Construction of the Body

When the body is in the normal erect position, the organs and weight of the body are so placed that we may speak of the "plumb line" construction of the body. When high heels raise the body and tilt it forward "out of plumb," so that the natural equilibrium of the body is destroyed, the important pelvic organs are displaced, and a great strain is placed on the spine, body muscles and ligaments, and on the bones and soft parts of the feet to keep the body upright.

The result is an interference with the circulation, a general congestion, and weakening of the special female pelvic organs, with backache, headache, and nervous exhaustion added to the local foot diseases. There are thousands of women seeking relief from nervous headaches who should realize the fact that "happy feet make head comfort"—and one cannot have happy feet unless she treats them with the consideration and kindness they deserve.

Corsets

When the women's sports era came in, with tennis, golf, basket-ball and all the other athletic pur-

suits, the abominable corset began to be less like "a bone fence with steel posts." Many women to-day wear corsets that are endorsed by some physicians — a lukewarm endorsement, for corsets are not hygienic. They may not produce corset liver or prolapsed stomach, nor act as a waist tourniquet to the extent that they did a few years ago, but they still have a strait-jacket effect upon freedom of motion and cause congestive headaches.

We must admit that the number of women who are altogether discarding corsets is increasing, but there is every reason why the majority of women should do so. Properly trained, and unsupported by corsets, the abdominal and back muscles have a chance to do what Nature intended them to do.

It is bad enough for women to jeopardize their health by wearing corsets, but it is cruel to put them on a young girl who has no judgment about what is best for her health, and who depends upon her mother for example and decision. Chinese foot-binding is not more cruel.

A young girl needs absolute freedom of movement, without constriction of her body. The disorders of puberty, and some of the discomfort and pain that cause women to demand "twilight sleep," will be prevented if the girls are uncorseted and properly dressed until — and after — full maturity.

The High Collar

The high collar is another health menace because it is worn so high and close that the large blood-vessels of the neck are constricted, and the return circulation from the brain is interfered with. This sort of collar causes the worst kind of congestive headaches.

Hair and Hats

The weight of the hair may cause headache, or wearing it dressed in a fashion that pulls or strains it tightly. Securing the hair with many pins and the addition of artificial hair, especially when it is worn like a poultice over the scalp, will often bring on headaches. Heavy, unventilated hats, and especially hats with a tight band that fit closely about the forehead, are headache breeders.

Periodical Headaches

Many women suffer from periodical headaches all through the child-bearing years, but much of this pain can be prevented by hygienic living. Those cases of headache due to diseases of women that require a physician's attention can be wonderfully relieved, if not entirely cured, by following rational diet, exercise, bathing and dressing; and

they are caused by not having so lived. The bad habits of dressing are responsible for a large per cent of such headaches. To cure them, remove the cause.

CHAPTER IV

Sick Headache

There is a certain form of headache that is very common and very distressing — usually described in everyday language as “sick headache.” In its lighter forms, it is also sometimes described as “nervous headache.” In medical literature it receives other names — “migraine,” “megrim,” or “hemicrania.”

Fortunately, the causes of sick headache are not obscure. On the contrary, they are very sharply defined and apparent. They are of two kinds — predisposing and exciting.

The predisposing causes are those which prepare the way and favor the development of an attack of headache. The exciting causes are those which excite an attack, or bring the symptoms to the surface, so that they may be felt or seen.

Predisposing Causes

The principal predisposing causes are hereditary, age, sex, and certain constitutional diseases. Concerning heredity, Möbius, a German authority,

claims that in ninety per cent of cases which he observed, inheritance was an active causative factor. Frequently, sick headache is directly inherited — that is, the father or mother, or both, are sufferers, the headache as a distinct disease being handed down from parents to offspring, often through several generations. The writer has observed the disease in four successive generations of the same family.

The hereditary influence in sick headache also expresses itself in other ways. Nearly always there is a history of nervous disorders in the family. Sometimes in the ancestors, migraine alternates with epilepsy, hysteria, and certain forms of insanity. The inheritance may also come as the result of some constitutional disease, not of a nervous character, in the ancestors, such as gout, rheumatism, tuberculosis, alcoholism and other disorders that weaken the vital forces in the parents; a weakness that, when transmitted to the children, may show itself in the sick headache habit.

Another characteristic which stamps this disease as hereditary, is its association with other nervous diseases. Very often we find it grafted on to a neurasthenic state. In fact, in the writer's experience, this is usually the case. It may also accompany certain organic diseases of the nervous system, such as locomotor ataxia, etc.

But while heredity is very active in causing sick headache, it should not be understood that the disease is incurable. Many hereditary defects may be overcome, to a large extent, by healthful living, and by the use of such means and remedies as will increase the vital resistance and improve the physical condition of the body generally.

The Age Factor

Age also plays an important part in the predisposing to sick headaches. It is a remarkable fact that thirty per cent of all cases begin between the ages of five and ten years. The rest occur usually at puberty, during adolescence, or in early adult life. Cases occur later, but the disease rarely begins after thirty, or before five, years of age. The disease may be seen as late as sixty or more years of age, but in cases of this kind, it has usually begun much earlier in life and has continued for many years. The rule is, that the attacks become less frequent and less severe as age advances and at the age of forty-five or fifty disappear.

Sex as a Cause of Sick Headache

That sex plays a part in sick headaches cannot be doubted. One authority states that fifty out of one hundred women are sufferers, and twenty-five out of one hundred men. All physicians testify

that sick headache is far more common among women than men.

Constitutional diseases, as observed above, are also an important factor. Often sick headache is associated with such debilitating disorders as anemia, indigestion, constipation, neurasthenia, and other diseases that lower the general health and lessen the vital resistance of the individual.

The Exciting Causes

When we come to the exciting causes, we find that usually they are most active in persons who are predisposed to sick headaches from one or more of the causes previously named.

Among the exciting causes, the following are most common: indigestion, constipation, so-called "intestinal autointoxication," excess of protein foods—particularly meat,—fatigue, nervous excitement and emotional disturbance, such as fright, anger, worry. Disease of the nose tissues, such as adenoid growths, is an exciting cause of sick headache.

Going out in the bright sunlight will develop an attack in some individuals, and taking an ordinary cold bath or going into the salt water will affect others in the same way. Any cause sufficient to make a decided impression upon a sensitive nervous system may develop an attack of sick headache.

Not long ago the writer had a gentleman under his care who had suffered from this disease nearly all his life. He could not go down to the city to do a simple errand, or go to the library to read or study — indeed, he could not make any mental effort that was unpleasant or taxing, without developing an attack of sick headache. In another case the patient had an attack whenever he exposed himself unduly to the direct rays of the sun.

In recent years, putrefactive changes in the intestines, with the absorption of poisons into the blood, and their distribution throughout the brain and nervous system, have come to be held responsible for many attacks. A typical case of sick headache is that of a young person from twenty to thirty years of age, suffering from symptoms of nervous weakness — neurasthenia; grafted on to this weakness of nerve centers is the attack of sick headache with an excess of hydrochloric acid in the stomach and constipated bowels.

The writer has also observed that exposure to cold or dampness for a considerable time has in many cases been sufficient to develop an attack.

Attacks are apt to be more common and more severe, too, if the individual suffers from any other disease, such as fever, rheumatism, pelvic disease or anything that lowers the general health.

Some of the Symptoms

For the purpose of facilitating treatment, it is well to have clearly in mind the symptoms, which, like the causes, are sharply defined. First come the premonitory symptoms — a feeling of indisposition, fatigue, exhaustion, faintness, loss of appetite, constipation, and sometimes insomnia for a night or so preceding the attack. In a typical case, sensory symptoms usually appear next. These consist of a feeling of numbness in the hands, of a prickling sensation in the tongue or about the lips; not infrequently there is a sensation of dimness of vision, “blind headache,” as if a veil were drawn before the eyes or a cloudy mist were passing. Sometimes floating spots are seen in the field of vision, and less frequently, flashes of light, of a zigzag outline. There may also be ringing in the ears and vertigo.

After these sensory symptoms have lasted for a short time — a few minutes or a few hours — the headache develops. It usually begins in a small spot, on one side in the temporal region, or in the frontal region, back of the eyeball, on top of the head, or, less frequently, at the back of the head. The pain is often described as a severe boring, throbbing sensation. As it progresses, it becomes more severe, and extends into new territory — usually

confined, however, to one side of the head, but in some instances, spreading over the entire head.

An attack lasts one, two, three, ten, even forty-eight hours, and seldom more than three days. The writer has seen a few cases, however, where the headache persisted day after day, week after week, and even month after month, recurring every day. This is unusual.

In typical cases, the headache usually terminates by sickness of the stomach, or by nausea and vomiting; after the stomach is emptied by vomiting, the pain usually disappears and the patient is relieved. In addition to these symptoms, there may be cold extremities, pallor of the face, slow pulse, or high blood-pressure and a feeling of general prostration attending the severe paroxysms of headache.

It should be remembered that there are all grades and shades of variations in the severity of these attacks, and that all the foregoing symptoms are by no means present in every case. The essential elements of this form of headache are its periodicity and its severe character. Nausea and vomiting are usually but not always present, some forms of sick headache where the nausea and vomiting are absent being mistaken for other forms of headache.

In some cases that have come under the writer's observation, the attacks came on quite regularly. One gentleman had an attack every Sunday. He

was a traveling salesman, and undoubtedly his habits of living on Sunday were sufficiently different from his everyday habits to develop the attacks.

In some cases, so-called "aphasia" may be present as a symptom. This is an inability of the individual to get the proper words to express his thoughts. In other cases there is considerable mental confusion and mental cloudiness. In extremely aggravated and persistent cases, there may be well-pronounced symptoms of melancholia, and other forms of insanity have been described as being associated with attacks of sick headache.

The Digestive Juice Is Altered

Another important symptom is the change in the secretion of the gastric juice of the stomach. The writer has examined a large number of cases of migraine or sick headaches. He usually makes an analysis of the contents of the stomach of these cases, because the condition of the digestive tract often has very much to do with bringing on an attack. Almost invariably in these cases of sick headache, it is found that there is an increased secretion of hydrochloric acid, which means that an excess of hydrochloric acid is secreted by the stomach. This condition is regarded by the medical profession at the present time as a secretory neurosis, that is, the excessive secretion of hydrochloric

acid is due to a disturbance of the nerves controlling the stomach. Occasionally one sees a case where the hydrochloric acid is diminished in quantity; these cases, however, are usually advanced in years, or this decrease in hydrochloric acid may be due to some other disease.

Numbness, pricking, crawling, and other paresthesias in the hands or extremities, in the face, the lips, and head, are sometimes present. Very often these abnormal sensations are confined to one side of the body, as, for instance, the right hand or the right leg. Attending, or soon following this disturbance of sensation, there is sometimes a weakness in the same leg or arm where the sensation is disturbed. The headache which follows soon after this is usually located in the opposite side of the head from the arm and leg in which the disturbed sensations and weaknesses of the muscles are located.

Look After the General Health

The treatment of sick headache depends upon the symptoms peculiar to the individual cases, as well as upon the causes. For instance, in the case of a child, where age is perhaps a factor, together with low vitality, the general health should be looked after. The child should not be allowed to overtax himself in school, and he should have

proper food, outdoor exercise, bathing and plenty of sleep. All of these measures will protect the nervous system against overdrafts that the severe strain of school work often imposes upon it.

The nose, eyes, teeth and throat of a person having migraine should be carefully examined. Sometimes the removal of polypi or adenoids, the removal of a deflected nasal septum, or an irritated bone may relieve the headache. Correct glasses and needed tooth treatment sometimes cure sick headache entirely.

The digestive tract should receive special attention. Indigestion and constipation should be corrected. The patient should have a nutritious, easily digested diet, and the protein elements of the food should be kept down to the minimum. Meat should be avoided entirely, for it is a well-established fact in the medical profession that the excessive use of protein, particularly meat, is sufficient often to develop an attack. Protein elements of food are irritating to a sensitive nervous system, and should not be used in excess. We have already stated, in the discussion of symptoms, that there is usually an increase of hydrochloric acid in the stomach. The diet should be so regulated as to lessen the secretion of the hydrochloric acid.

Constipation

Constipation will very often be found present in cases of sick headache. This should be relieved by diet, cold baths, and by proper exercise. Special manual movements and massage, and the use of electricity in the hands of a reputable physician only, are very helpful curative means when convenient. In cases of obstinate constipation, the cool water enema may often be taken advantageously, for a time, for relief of the bowels.

The habits of the individual should all be carefully regulated. He should have regular hours of sleep, preferably in the open air; he should avoid physical and mental strain of all kinds, and should lead an outdoor life. Anemia and other constitutional diseases often accompany sick headache. These, of course, should have proper and careful medical attention and general tonic treatment should be taken to improve the health, as in most cases a lowering of the health is partly responsible for the attacks. Short cold baths are the best tonic for these cases. They may be taken in the form of a cold mitten friction, wet towel rub or cool shower bath.

The foregoing description of treatment refers especially to the removal of the cause of the disease and improving the general condition of the system.

How to Meet an Attack

We may now consider briefly the treatment of an attack of sick headache. When the symptoms begin to come on, a number of measures may abort the actual attack. If the bowels have not moved recently, a warm enema should be taken to empty them thoroughly. If there are symptoms of indigestion and disturbance of the function of the stomach, the stomach may be washed out to advantage. Usually it is best for the patient to omit a meal or two, though if one has not eaten food for several hours, and feels faint and weak, sometimes a glassful of warm drink, such as hot malted milk, is sufficient to avert an attack.

The patient should immediately go to bed in a quiet, dark room, as light and noises often increase the headache. He should drink two or three glasses of hot water. A hot blanket pack should be given to the hips and legs, or a hot foot and leg bath, or a warm, full water bath at 98° to 102°F. for fifteen minutes. A cold compress should always be applied to the head.

All of these warm treatments tend to relax the spasm of the blood-vessels that is usually present, to reduce the blood-pressure and so relieve the headache. Sometimes cold to the head, and very often heat to the head, will relieve the pain. Whether

the hot or the cold should be applied to the head in any particular case, is largely a matter of experiment as the patient finds relief; some cases do better with cold applications and others with hot. Sometimes two or three glasses of hot water, or a warm drink of any kind, will relieve the attack.

If the above remedies are carefully and intelligently used, they are sufficient to prevent and relieve many cases of sick headache, and are far superior to drugs. For it should be remembered that sick headache is usually a chronic disorder and the use of drug remedies, if kept up for a long time, always do harm rather than good.

CHAPTER V

Congestive Headache

The most common headache of this type is also called "toxic" headache and may be divided into two groups: First, "toxic" headaches, or those due to poisons taken into the body, usually voluntarily; second, "autotoxic" headaches, or those due to poisons produced within the body.

We can hardly place too much emphasis upon the frequently met cases of autointoxication: It is one of the most common disorders to-day. The public press is flooded with autointoxication matter. Also the laity is over-educated in regard to high blood pressure which is often due to autointoxication. When a patient has headaches and tells the doctor he thinks his blood pressure is high and that he has autointoxication, he has often correctly diagnosed his own case.

Poisons taken into the body are alcohol, tobacco, tea, coffee, drugs, foul air, impure water, tainted and unwholesome food.

These poisons may act in one or two ways: they

may irritate and produce an abnormal condition in the nerve cells and nerve fibers that make up the sensory part of the brain; or they may cause headache by producing congestion of the brain, which in turn may irritate the sensory part of the brain, or that part of the brain where we recognize sensations of pain.

Avoid Toxic Causes

The first step in treatment is to remove the cause, which is not a difficult matter if you are willing to live a rational life. Discontinue entirely the use of alcohol, tobacco, tea, coffee and other drugs and poisons. Live outdoors as much as possible. The sleeping and living rooms should be carefully ventilated. It is important to remember that air is a material thing, and that in the ventilation of rooms no fresh air can be taken in until the foul air is allowed to pass out.

The water supply should be pure and of the best quality, free from organic material or germs, and preferably should be free from inorganic salts, especially lime salts. Pure soft water is more wholesome than that which contains a large amount of inorganic salts that produce hardness of the water.

Tainted foods and excessive amounts of food should be avoided, as also foods containing putrefactive germs, the chemical poisons of which often

cause ptomaine and other forms of poisoning that are associated with severe headaches and other distressing symptoms. Have the food of the very best quality, properly cooked, nutritious, wholesome and palatable without being stimulating, and free from poisonous germs or chemical poisons of any kind. Foods rich in nitrogenous substances—the proteins—are often the cause of headache, a fact that has been attested by scientific experiments. These should be taken in moderation at all times, and should be omitted entirely for a few meals, during an attack of headache.

Protein foods include meat, fish, eggs, nuts, peas, beans, lentils, etc.

Autotoxic Poisons

Autotoxic headaches are produced by poisons formed within the body itself. These poisons are developed first in the alimentary canal, and for the most part, at least, in the large intestine or colon; also they may be due to hepatic or renal insufficiency—which means, in simple terms, inactivity of the liver and kidneys.

Our attention in more recent times has been drawn to the importance of poisons formed in the alimentary canal, particularly in the colon. These poisons are the result of the activity of certain putrefactive germs that live and multiply and by

their life processes produce chemical poisons in the colon. They are soluble and absorbable, being absorbed into the blood and carried to the brain and other parts of the body. They irritate the delicate nerve cells of the brain, and also act very much in the same way as the toxic substances described in the previous paragraphs.

An inactive liver may also be responsible for the production and accumulation of poisons in the body. One of the chief functions of the liver is to destroy poisons which the circulating blood brings to it from the food canal. If the liver is not doing its work, these poisons are allowed to enter the circulation, and they finally reach the brain. In many cases of headache, the kidneys are also inactive. They need not necessarily be organically diseased, but on account of their inactivity, poisons which they should aid in eliminating from the body are retained and accumulate, being carried to the brain, where they irritate the sensory nerve cells.

Get Rid of Poisons

The first essential in the treatment of headache is to help the body rid itself of poisons. It is of great importance that we take good care of the teeth. Many people suffer from decayed teeth and pyorrhea alveolaris — Riggs' disease. Poisons are generated constantly in the mouth and about the

teeth ; some of them are swallowed into the stomach or absorbed through the mucous membrane of the mouth and taken into the system in this way, causing severe autointoxication or autoinfection. One should see the dentist and have the mouth and teeth thoroughly examined and properly treated whenever treatment is needed.

In certain conditions, such as rheumatism and gout, toxic headaches are often a common symptom. There is a disturbance of metabolism — that is, a disturbance in the physical and chemical changes which normally take place in the body. There is usually also a lack of oxidation, so that the waste material in the body is not completely burned up. In this condition, the body is in very much the same condition as a furnace that has become clogged with cinders that have not been completely burned. The cinders block and choke the air passages to the furnace, and thus not only prevent the free circulation of air and oxygen in the furnace, but because they have not been completely burned, they themselves are difficult to remove. In the human body, when the waste material or food substances have not been completely oxidized or burned up, the waste is not easily eliminated, and lingers behind in the joints and other parts of the body, and, reaching the membrane of the brain, causes congestive headaches.

Avoid food that contains too large a proportion of protein. In a normal ration for a healthy individual, the proportion of protein in the food should be about one-tenth of the total quantity. The food should consist largely of well-cooked cereals, fresh vegetables and ripe fruits. Take plenty of time to eat, chewing the food thoroughly. Never eat when the body is tired or after strenuous exercise. Rest first.

See that the bowels move thoroughly at least once a day. With many people in middle or after middle life, where there is a tendency to constipation, two or three movements a day are quite essential. A free use of fruit is excellent, and will aid in keeping the bowels open. Drink plenty of pure water—at least six to eight glasses a day. Water puts the poisons of the body in solution and carries them to various eliminative organs so that they may be removed.

One of the best ways of getting rid of poisons in the body is to exercise in the open air. Indeed, the body depends to a very great extent upon the lungs for the elimination of its poisons. Exercise increases the activity of the heart, improves the circulation of the blood, brings the poisons of the body to the lungs and other excretory organs; exercise increases the perspiration, the skin being one of the main eliminative agents. Exercise should be taken in the open

air in order that more oxygen may be taken into the body for burning up the poisonous wastes.

To Relieve Congestion of the Head

Apply those derivative measures that will draw the blood from the vessels of the brain into other parts of the body. For this purpose use a warm bath 96° to 98°F., lasting fifteen minutes. During the bath, keep applied to the head a cloth frequently wrung out of cold water.

Hot foot baths are also an excellent remedy, as also hot blanket packs to the hips and legs, this latter treatment being given as follows: It is usually best to keep the patient in his own bed, so that after the pack, he can go to sleep without being disturbed or excited by moving from one room to another. The first step is to spread out upon the bed a dry blanket; upon this place a woolen blanket that has been wrung out of water as hot as can be borne by the naked hands, and upon this in turn another dry blanket. Then have the patient lie down upon the blankets and snugly wrap the blankets about the hips and legs. A rubber bag containing hot water should also be placed at the feet.

Before giving this treatment, it is well to make certain that the bowels have moved. For this purpose, an enema of a temperature of from 98° to 100°F. may be given. Also the patient should

drink two glasses of hot water at the beginning of the treatment, and remain in the pack from twenty to thirty minutes, or until a gentle or moderate perspiration is produced. The head should be kept cool during the pack by means of towels wrung out of cold water. On removing the patient from the pack, sponge him off gently or cool off with a towel rub, making certain that the body is thoroughly dried. The patient is then ready to go to sleep without further disturbance.

A hot foot bath is often efficacious in giving speedy relief. This consists merely in putting the feet into a bucket filled with water as hot as can be borne, and wrapping the legs in such a way as to prevent the heat from escaping, and in the meantime sipping hot water or hot lemonade. These warm applications serve to dilate the surface blood-vessels and thus draw the blood back to the skin, and away from the congested head.

In all cases of headache, whatever the cause, make sure that the stomach and bowels receive proper attention, as the absorption of poisons from the intestinal tract may act with the other causes in keeping up the headache. The bowels should be emptied by a warm enema.

CHAPTER VI

Anemic and Neuralgic Headache

In cases of general anemia, when the blood is impoverished or tainted, and also in any case where great debility and exhaustion is present, a constant headache is an ever present symptom. The patient is usually pale and listless, which is a quite different condition from a congestive headache case with the flushed face and excited restlessness.

Malignant disease, the presence of pus in the body, tuberculosis, lactation, hemorrhage of any part, and mal-nutrition, as well as pernicious, and other forms of anemia, are all conditions that may be accompanied by an anemic headache.

These disorders cause a lack of blood in the brain — there is not enough to do the work of the brain. The anemic headache often changes from a sharp darting pain to a “clawing” sensation; sometimes the patient describes it as “a tight band about the head.” Lying down usually relieves the headache, as that position favors the flow of the blood to the head; for this reason less discomfort is felt in the

early morning hours. Anemic patients do not sleep well at night but are often stupidly drowsy in the day-time. Light and sound increase the headache. The beating, or pulsation, of the large blood-vessels in the neck is feeble, again quite different from the pounding throb in congestive headache.

To cure the anemic headaches, more and better blood must be made by carefully following a nourishing dietary. Plenty of fresh air is needed. The patient should lie down as much as possible, and it often helps to elevate the feet and legs by cushions, or placing blocks under the foot of the bed or couch so that the head of the patient is lower than her feet.

In an advanced stage of anemia where serious disease is present, the patient appreciates the need of a physician's care, but in the beginning of anemia and where the headaches seem the chief symptom, patients are very likely to direct their own treatment; in hygienic living is often found a complete cure. It takes time and patience. Especially must all drugs and opiates be avoided. It is the anemic headache patient who clamors for relief from the nerve pain and who demands a remedy for insomnia due to pain. It is also the anemic patient whose listlessness and need of lying down during the day makes her sure that a "tonic" is needed — something to tone her blood and take away the "tired feeling."

Harmful Remedies

Patent medicines make a powerful appeal to such sufferers. Fortunately our public health laws and the campaign against patent medicines, alcohol and drugs are making it difficult for people to be the victims of their own imprudence. Nothing could possibly do so much harm in anemia as alcohol, sedatives and pain-numbing drugs. The use of stimulating medicines and the various prescriptions too often given to neuralgic cases do very little good. It is like whipping a starved, exhausted horse to speed him up, or trying to start a broken machine. Patiently, day after day, the blood must be fed, and the upbuilding of the body accomplished by rational, natural methods.

Curative Remedies

Sleeping and resting in the open air, a diet rich in blood building elements, the hydrotherapeutic treatment — these are the remedies for anemic headaches and later we shall have our talk on these methods. The local application of heat, moist and dry, is the panacea for neuralgic pain. Rarely, a patient prefers cold instead of heat. Fomentations to the head, a hot water bag, and electricity wonderfully relieve anemic headaches. Cool sponge baths, the affusion, and the tonic baths are indicated in anemia. Hot packs, hot

foot and leg baths, and all the derivative measures that draw the blood from the head are contra-indicated in anemia. What we want to do is to establish a better circulation so that there is more blood in the brain; and the quality of the blood must also be changed for the better.

CHAPTER VII

Emotion Headache

There is no state of mind that so quickly affects the regular, organic working of the brain as strong emotion, and so it is only natural that emotion excites various nervous disorders — headaches, epilepsy and even insanity.

The character of the pain in emotional headache is throbbing, or “splitting” — sufferers often say, “I have a splitting headache,” and “my head feels as if it would burst.” The distress varies in intensity from a dull ache to an acute pain.

The stronger the emotions, the more likely they are to cause headaches. One is apt to think of a violent fit of temper, or some great grief, as the kind of emotion that produces headaches, but vexation, anxiety and the “worry” habit are more common causes. Suspense or joy — any profound emotion will bring on a headache. Sometimes listening to fine music, or seeing a play, will so work on the feelings as to end in a bad headache.

The Excitement of Anticipation

Excitement is a condition that accompanies an emotion, and yet it may occur independently of a special outburst; that is, a person may give way to a tempest of anger or sorrow, and then sometime after the attack has passed, he remains in a state of nervous excitement which we may compare to the groundswell of the ocean after a storm. The whole nervous system is in a different condition from what it was before the emotional outburst. Sometimes in preparing for a holiday, or a party, or some unusual social function, an individual may be quite excited, or "nerved up," as the saying is; here the excitement is attached to the event and yet quite distinct from it.

Probably the most exciting form of emotion is experienced when one is in suspense, as when in doubt as to the course of an illness, the safety of a friend, or the result of a business deal. Then, too, mental anxiety before a school or college examination, before entering a race or a shooting match, or before any trial of skill causes great excitement. In these cases, there is not much, if any, outward showing of excitement, as there is in a fit of anger; one is in a state of suppressed excitement, and the result is great nervous tension. Suppressed excitement is often worse in the long run than the emotion that explodes in muscular action, like an outburst of tem-

per; where there is an outlet for the emotion, the excitement passes off much more quickly and a severe headache is less likely to follow.

The Emotional Temperament

From what has been said, it is easily understood why temperament is such a factor in headaches. A person with an emotional temperament is more apt to have headaches than the stolid individual who is not easily stirred. The stolid, matter-of-fact one may never reach the heights of joy or the depths of sorrow that the impressionable person experiences, but he is at least saved much nervous disturbance; he is the man who more often says, "I never have headaches." We often find families who are prone to headaches, especially in the female line, and in these cases the sufferers have inherited the emotional temperament.

On the other hand, while emotion causes headache, it may also relieve it, temporarily, at least; a sudden fright, the need of meeting an emergency, or some especially cheerful and interesting episode will cause one "to forget" a headache.

Self-Control

Those who have a decided emotional temperament should be trained to keep under that side of their nature. Parents should carefully study the dispositions of children and care should be taken to repress

any tendency to excitability. Such children must go to bed early, and not be allowed to attend theaters, "movies," or shows that are unduly exciting. Pleasure and entertainment can be provided without the intensely exciting element. Give a child's teachers a hint in regard to his temperament, so the school influence may work in line with the home influence. Above all things, any reference to his nervousness, emotional disposition, etc., should never be made in a young child's presence. He is apt to feel that it is a distinction, or an excuse for being indulged. When a child gets old enough to understand the situation, it is best to explain "temperament" to him; that will help him to find his own leading traits and he will be saved more than one rude shock and much needless wear and tear.

The Worry Habit

It is particularly desirable for everybody to realize that "worry" is the most universal emotion that causes headache. The continued, suppressed excitement of worry has a most destructive effect upon the nervous system. Doctors are continually harping upon the fact, and telling people to cultivate the habit of banishing worry. Children can be taught this mental habit. What good does worry do? Just at first, to be anxious about a thing will prompt one to take fit action, but beyond that, worry is positively

harmful for it tends to paralyze effort and it surely causes pain — headache.

Emotional people are impulsive, quick to act, always “on the go,” and they speak rapidly and talk much. A physician who specializes in nervous diseases, not long ago said: “Too much talking often causes nervous prostration.” Emotional people must try to be slow and deliberate in their movements and speech, and to cultivate composure. Misdirected nervous energy must be turned into proper channels of physical expression.

The Cure for Restlessness

Restlessness of mind and body can find a safe outlet in regular open air exercise. Any of the sports — swimming, horseback riding, tennis and golf are aids to composure, and especially golf; the body must be trained to obey a well balanced mind, and golf demands just the right proportion of mental and physical concentration to aid in acquiring poise. Comparatively few people have golf privileges, but a brisk walk every day — a long walk — will banish many an emotional mood.

Deep emotions can be met in a way to give new strength and power for use if we have a sane philosophy and a sound body to meet it. But this sort of poise is the result of years of experience and self-control; it is possible, however, for a person

calmly to meet exciting events at short notice if he understands his emotional temperament and is determined to maintain poise. In a word, emotional, headaching people must resolve "to go softly all their days."

How the Physician Can Help

A physician may often be of help in relieving headaches of this kind by taking a personal interest in the daily life and affairs of his patient and endeavoring to help him in arranging his personal matters so that the cause of the worry or anxiety may be reduced or entirely removed.

Cases of this kind open up to the sympathetic and interested physician a field of usefulness of which he does not always take advantage. Of course, it is useless to tell the patient to stop worrying, when the cause of the worry is hanging over him all the time and is continually active in producing his headache. But the physician should take a friendly interest in his patient and see if there is anything which he can do to remove the causes that are responsible, not only for the headache, but also for other troubles. Every physician should practice this sort of mental healing.

Since headaches caused by mental conditions usually produce congestion of the brain, the treatment for headaches of this kind should include such measures as will reduce the congestion. It is im-

portant always to keep in mind the general health. For no matter what the cause of the headache may be, the greater the bodily vigor and the better the general health, the more power the patient will have to resist and combat both the cause of the headache and the headache itself.

Control the Temper

There is a variety of emotional headache that the writer thinks worthy of special emphasis, aside from reference already made to it. One cannot have good health unless he controls his temper. It is not only the great rages and violent bursts of anger that disturb normal functions, but also the habit of irritation and impatience.

There are some people who are entirely upset when the weather does not suit their plans, while there are others to whom scorched breakfast toast is a tragedy. The lack of poise that is manifested in constant fretting and fault finding has a very bad effect upon the health.

We are all familiar with the angry appearance of the human countenance — it shows in the eyes, the set jaws, the scowls, the flush or pallor of the face; the rigid body and clenched fists are additional signs of intense feeling. When one is very angry, he feels the heart beating rapidly, his ears hum, and his muscles twitch; the knees feel weak, the mouth be-

comes parched, and he is nearly choked with wrath. Then comes the outburst!

Emotion Retards Normal Functions

It is easy to believe that such a condition of emotion profoundly affects the whole bodily economy, and this is precisely what happens.

The dry mouth, which is a symptom of great anxiety as well as of anger, is due to a sudden suppression of secretion of the saliva. In India, practical use was made of this fact in what was known as "the ordeal of rice." When several persons were suspected of crime, the consecrated rice was given them to chew, and this after a time was expectorated upon the leaf of the sacred fig tree. If any one ejected it dry, that was taken as proof that fear of discovery had stopped salivary secretion and the person was found guilty.

Experiments have proved that the gastric juice flow is also stopped by great excitement. Not long since, Oechsler reported that the secretion of pancreatic juice and bile are also checked, and therefore all the means of bringing about chemical changes in the food are lacking during a period of excitement and for some time after. It is also true that the churning and wave-like movements of the stomach and intestines are wholly stopped when one is greatly excited.

This effect upon the digestive organs takes place in a modified degree when one gives way to the milder feelings of anger which we call irritation, fretfulness and impatience. If the habits of cheerfulness, serenity and good temper are not cultivated, and if one goes about looking for trouble and allowing himself to get "all worked up" over trifles, a sort of digestive inertia is established, and gradually dyspepsia in some form appears; then we may get the reflex condition — that is, the morose temperament that results from recognized functional or organic indigestion.

Hormones

Scientists have discovered that the secretions of the ductless glands (like the thyroid and adrenal bodies) pass directly into the blood. These glands produce "hormones," which powerfully influence the functions of the body, either favorably or unfavorably. Now the emotional states change the secretive hormones, as well as other secretions of the body.

Under the stress of anger or irritation, there is an increase of blood sugar, coagulation, and blood pressure, with a corresponding effect upon muscular tissue. The nerves that control the heart's action and breathing are unfavorably affected by a bad temper. When we see a scowling face and hear a scolding voice, we know that much more is going

on inside that person than appears, disagreeable and unhappy as the manifestation is.

The writer recalls one case of a woman who had a very bad temper which made her a real burden to her family. All her life, she had been given to disagreeable fits, when she would scold and berate everybody within sight and sound, or lapse into a sullen state. She had not been properly disciplined as a child, and all sorts of excuses were made for her "spells." It was this woman's boast that she had always been well *except for congestive headaches*, and never had a doctor. One day at the age of fifty-five, she had a stroke of apoplexy, which left her partially paralyzed. The family thought it a strange happening and a sister said: "She has not had one of her ugly fits for quite a while, so excitement couldn't have caused it."

The physician, however, knew that it was the lifelong habit of temper that had, little by little, undermined the bodily integrity until the stroke came upon the victim of her own unfortunate lack of self-control.

It is, indeed, highly important to cultivate an indifference to small annoyances and learn to control temper, or congestive headaches will be the least of the disorders produced by the poisons of such emotional excitement.

CHAPTER VIII

The Headache of Monotony

There is a type of headache that is really in a class by itself, and may properly be called the headache due to the monotony of daily routine. It is a psychological condition rather than a pathological or diseased state, and illustrates the saying that "variety is the spice of life."

The character of the pain in this peculiar headache varies with the individual; it may be somewhat sharp like neuralgia, or perhaps a throbbing ache, but it is usually more of a dull, miserable pressure and discomfort.

This sort of headache does not put one to bed, but it takes all the energy and purpose out of life, and makes the days seem forty-eight hours long. The day may begin fairly well, but after a few hours, a depressed, discouraged feeling takes possession of one, and by the middle of the afternoon, the usual headache is on, and the weariness and listlessness are almost unbearable. One manages to drag through the

day's duties, and then gets to bed as soon as possible, feeling that he has lived through one more day.

Drugs Do not Cure It

Now this is a rather melancholy description, and yet there are thousands of people who are suffering with just this sort of disorder and so are leading a joyless existence. Such patients (and they are patient in more than one way) rarely consult a physician because their general health seems fairly good, and while their appetites are not keen, they eat sufficient food; the only bad symptom is this weary head, day after day, with an occasional let-up.

Another fact is, that those who suffer from this type of headache often are so situated that they feel a doctor's bill is a luxury and an expense not to be incurred, save in severe illness; therefore, these patients are easy victims of the dangerous and often fatal "headache powders" and patent medicine "tonics." These poison stuffs are widely advertised to cure headaches like magic, and to put "tone" into jaded bodies. Where one is soothed and braced by these pernicious drugs, life does seem more worth while for a time, but before long the sufferers find themselves craving these remedies; drug habits are formed, and a condition is established so much worse than the original trouble that there is no comparison.

Now let us see if, by getting at the real cause of

the headaches of monotony, we cannot find a rational cure.

The Life of Deadly Sameness

Who are the people who have this kind of headache? They are men and women who lead a life of deadly sameness, whose work necessarily is without stimulating variety and who have little opportunity for social companionship or entertainment.

There are many women (especially on isolated farms in the country) who lead a very hard, working life from early dawn until bedtime, and who are very much alone day after day. There is no variety of interest. Every day is like another, and after years of this monotonous life, the steady headaches develop because a stagnation in normal brain activity, with congestion of the circulation in the brain, is present, there is no stimulating mental life and no outlet for individual expression. Wherever there is congestion and suppression in the body, there is physical discomfort, and always headache.

There is also a large body of men who are keeping books in business houses, who are poring over monotonous columns of data all day and are mere human adding machines. Their minds necessarily run in grooves and they come to the end of the working day, tired, head aching, and without any ambition except to rest. These are the men who are easily tempted

to take a glass of beer or stronger drink with the hastily bolted lunch, or after work hours, and in addition to headaches, the liquor habit is too often formed as a result of taking a drink to drive away the headaches caused by monotonous labor.

Stenographers find themselves with the same kind of headaches when their work is not of a varied, interesting nature. There is something about the steady tapping and clicking sound of the typewriting machine keys that "gets on the nerves" after one has done this kind of work a long time. A list of monotonous occupations could easily be cited, but these few answer our purpose.

Have a Hobby

If the daily labor is genuinely interesting to a man or woman, it is not monotonous. The interest saves the situation.

Somebody must do the uninteresting, unchanging work; and since so much work is done mechanically, solely as the means whereby a living is made, ways must be found to keep alive the enthusiasms and to bring variety into a dull, colorless life.

Workers must get away from the irksome daily task, and by having a hobby, prevent the headaches due to tread-mill occupation. They must follow up some special open-air sport — golf is wonderfully good exercise for muscles and mind — some branch

of horticulture, bird-study; go to a gymnasium, attend a course of lectures — force themselves to do something entirely outside their line of work. The craze for attending moving picture shows has reached such a point that physicians are forced to restrain people from too frequent attendance at these entertainments. Eye-strain, headaches, impure air disorders and undue excitement are results of too much "movie" dissipation. But when other better things are not accessible, and occasionally in any case, a really good moving picture show will be of great benefit to any one whose work tends to monotony. There are educational and fine dramatic plays thrown on the screen in these days of film censorship that are good for stale bodies and weary brains; a dull mind makes a stale body.

When the day's work is over, in spite of headache and weariness, it is best to take a sponge bath and make a change from the working clothes. It is easier to lay aside the working habit of mind if the working garments are removed. To take a walk, to read something interesting, to have a little music — even if it is machine made — to make a call on some one who will not talk shop, unless it is a different shop — these are refreshing, curative things to do.

Those who live in the country, away from neighbors, must deliberately set themselves to choosing a hobby for their leisure time, or finding something to

occupy the thoughts pleasantly and profitably while doing manual labor. To work in a singing mood is to drive away dullness.

Variety *is* the spice of life, and if your daily life has lacked variety so long that you are a victim of the headaches due to monotony, these suggestions may help you in finding some special spice that will effect a cure and create a growing interest in the day's work.

CHAPTER IX

What to Eat

Dietetics is not a matter of guess work but of science. Many years ago when diet was guess work and personal experimenting, patients sometimes did well on a diet, or sometimes they grew worse, and nobody knew just why or how these results came about — there was no definite method used.

Experiments in laboratories and in kitchens where food chemistry principles have been practically worked out, enable the housewife to-day to prepare proper food in the best possible way that makes for the health of the family. This work has not been a matter of a few years but of many, and the most earnest students of science have devoted themselves to this line of work. Chittenden, Benedict, Wendel, Pawlow, Fisher, Kellogg and a host of other investigators have successfully struggled with the food problem, for the benefit of a public that has so far been unwilling to profit by their labors to any great extent.

Physicians realize, and they tell their patients, that certain diseases are largely prevented and cured by attention to dietetics and rules of hygiene.

There are many popular sayings that emphasize the importance of the food question: "Tell me what you eat and I will tell you what you are," but men do not like to be called swine or oxen. "What a man eats to-day walks around to-morrow"; it is not courteous to call a woman a hen, or to suggest that a man struts like a turkey; yet pork, beef and poultry are eaten in enormous quantities. "Men dig their graves with their teeth," and largely because of poor food and neglect, the natural tools decay first so that an artificial set is bought to finish the job.

Food Causes and Cures Headaches

The toxic and autotoxic varieties form by far the largest per cent of headaches, and in food selection we have the remedy in our own hands. In order to enable the headache victim to properly select his food, we will consider, somewhat briefly, the question of dietetics. We have already referred to the need of a low protein diet in congestive headaches, and the necessity for feeding and building up a starved, anemic system over-run with neuralgia; more definite instruction in regard to the right kind of food in these conditions will be helpful and far more useful in curing headaches than prescriptions of medicine.

The writer has proved in his many years of practice that it is possible for patients to carry out specified dietaries in their own homes *if they choose to*

do so. Many cases that go through a sanitarium, or while under a physician's advice, are temporarily helped — practically cured. But if bad habits of eating and living are resumed, it is only reasonable to expect bad bodily conditions to return. It is necessary to be careful of the diet and perseveringly to follow rules of hygiene if one really wishes to enjoy health and be free from headache.

The sparsely fed poor people are vastly better off than the well-to-do farmer whose table (and stomach) is often laden with fried pork, pancakes and pie; his automobiles and the convenient trolley lines have not carried this type of farmer entirely away from old, established customs of eating. The rich city folks who are given to lobster luncheons and late death-dealing dinners may take a different route from the aforesaid farmer, but they both lose their health on the way — only the farmer's outdoor life gives him a longer run.

It is not saying too much to add that the meager meals of the poor man also give him an advantage over the one in comfortable, moderate circumstances. Why? He has no money to buy other than the simplest food, and not so much of that as to over-eat. His body thrives in spite of so-called privations. People often say: "How is it that the children of the very poor seem so well and strong when they don't get half enough to eat?" The fact is, by far the

greater number get very nearly as much as is good for them — a great deal more than “half enough.” The great trouble with the majority of people — Americans certainly — is that they over eat every day and at every meal, and that their food is selected with absolutely no regard for its natural and rational purpose. Of course we have headaches. If a stone is thrown into a pool, it makes ever widening circles to the water’s edge, and so the wrong food makes a disturbance in the digestive fluids that is felt all over the body.

Bad Habits in Eating

All our lives, from the time the baby is given “tastes” of cake, sweets and meats, until we are able to choose our own food, the natural body-hunger is not considered, but only the cultivated desire for things a vitiated palate craves. A natural appetite is rarely found — perverted taste controls food selection. An abnormal taste habit is one of the most difficult to overcome; the longer it has been in force, the harder it is to reform. That is why patients are so seldom able to adhere to a strict diet; so many times one says: “I cannot deny myself when it comes to food.”

When the bodily disease is so serious that one stands on the edge of the grave, or when pain is so keen as to be almost unbearable, then it is compara-

tively easy to follow a diet. But why wait until things reach such a pass? It would seem that health, comfort, and a long life are sufficiently desirable to be worth paying the sane price of decent living.

Since toxemia and autointoxication are not only disgraceful but needless disorders, let us see how one should eat to avoid them, and thus escape so much of bad headache as goes with these conditions.

Classification of Foods

There are three principal classes of foods, and these food elements in proper proportion are absolutely necessary to the health of the body. First, protein which builds blood and tissue: Second, carbohydrates which supply the energy and heat: Third, fats which support work and heat.

To the protein class belong lean meats, eggs, milk, cheese, nuts, legumes and cereals.

Carbohydrates include the starches, sugars, and cellulose. Cereals, potatoes, and other vegetables are starch foods. Sugars are abundant in fruits, sugar cane, sugar beet, and in maple sap.

Fats are found in fat meat, milk, butter, egg yolks, olives, nuts, and in some plant seeds — cotton seed, for example.

In addition to these body nourishing food elements, there are certain body regulating food materials that are necessary to health: Namely, cellulose, mineral

salts, fruit acids, vitamins and water — about seventy per cent of the body is water.

Mineral matter is contained in milk, fruits, vegetables and cereals. It is needed as bone and hard tissue food, and increases or decreases the alkalinity of the blood in proportion to its intake.

Cellulose is in all vegetables, fruits, and cereals, especially in the coarse vegetables and in the bran of cereals.

Vitamins

Vitamins are substances contained in small amounts in foods and they exert a marked and not entirely understood influence upon growth and health. We know that they are essential and are abundantly found in fruits, vegetables and butter fat. Because they are probably partially or wholly destroyed by cooking at high temperature, it is best to eat considerable of the uncooked fruits and fresh vegetables in order to be sure we get sufficient vitamins.

Overeating

Any food taken in excess may produce disease; food that is eaten hastily, or not properly prepared, will cause digestive disturbance and headache. There are some food substances that are more likely to cause trouble than others. Lean meats are rich in

protein and are objectionable because they contain toxic substances and when introduced into the body are liable to cause toxemia.

Too much fat food, whether animal fat or vegetable fat, produces a "stiffness" and lessens the production of gastric juice — this retards gastric digestion.

Of the carbohydrates, cane sugar is especially objectionable, as it irritates the stomach and causes hyperacidity.

Spices and all condiments in excess cause catarrh of the stomach and bowels, and hardening of the liver.

Tea, coffee, chocolate and cocoa have practically no food value and they do contain poisons which have the same effect in the body as uric acid. Beer and alcoholic beverages have little food value and are poisons.

Substitutes for Meat

There are many people who cannot take milk. So-called "bilious" headaches and sick headaches are very often produced by drinking milk. Stale eggs are wholly unfit for food, and often cause very distressing illness. Vegetable foods, especially nuts and the legumes (peas, beans, and lentils), contain all the elements found in meat, and contain them in a fresh and pure form; they are free from germs and toxins, and they are digestible. Fruit juices, fruits,

cereals and cereal drinks not only have their own place in the menu but render such beverages as tea, coffee, etc., unnecessary.

The Required Food Intake

While excess of food is very injurious, too little is dangerous, except when under a doctor's prescription by way of a remedial measure. The best authorities have estimated that about 2500 calories of food is a maximum daily ration for an average adult person in health. A calory is the unit for measuring food value. (See tables for the number of calories in each ounce of food.) The daily food intake should consist of one-tenth protein food, three-tenths fats, and six-tenths carbohydrates.

We can give only general suggestions about modifying the diet to suit varying conditions. If the average sized individual eats over 2500 calories daily, he is eating more than he needs, even if his food is well chosen. If less than 1700 calories daily are eaten, the amount is too small.

Special Diet

If a patient is too thin and losing flesh, the amount of fats and protein should be increased.

In case of a lack of gastric juice — too little acid — the fats must be decreased, especially oil, cream

and butter; nut fats are not so bad and the nuts contain the needed protein. For a time, one can cut down the fat intake one-third of normal amount.

When evidences of autointoxication are present, the protein allowance must be lowered about two-thirds, and for a short time may be almost cut out. Coated tongue, bad breath, constipation, foul smelling stools, gas in stomach or bowels, and frequent congestive headaches are all autointoxication signs.

Food Characteristics

In reducing and modifying the diet, it is essential to watch not only the effect on the disease symptoms but also the individual's weight, strength and energy.

The antitoxic foods are those that increase or stimulate the gastric juice and for that reason are germicidal. Acid fruits and juices are antitoxic.

The foods which lessen gastric juice are suitable in all cases of increased acidity of the stomach: cream (when one can digest it), butter, nuts, ripe olives, olive oil, and all fats.

Laxative foods are sugar, honey, sirups, sweet fruits, and fruit juices. (Acid fruits are also laxative.) Fats encourage intestinal action. Foods that carry an amount of indigestible substance help move the bowels because of their bulk and are prescribed always unless there is some mechanical intestinal ob-

struction — a “kink,” or an adhesion. Bran mixed with cereals, or in soups, fruit sauces, or cooked in bread, is a highly laxative food material.

The constipating foods are those which contain little residue. Rice, fine wheat flour, cornstarch, gelatin, white of egg, oatmeal mush, gruels, boiled milk and such things are highly constipating. Cereal preparations that are not over-cooked, and not made into mush, are not constipating — they have bulk. Rye and graham porridge is prescribed in cases of constipation, especially when eaten with prunes, apples and cooked fruits; the combination is more laxative than are the coarse grains alone.

The fattening foods are those that are rich in fats, starch or sugar; they require thorough mastication to be well digested. No food can be assimilated or used by the body until it is digested, and it is the assimilated food that counts as nourishment.

CHAPTER X

Diet List

The following tables will enable one to intelligently plan a dietary to suit existing conditions. The figures in the Diet List are based upon United States Department of Agriculture Bulletin 28, and data furnished by the research laboratory of the Battle Creek Sanitarium. The Life Insurance Tables of Heights and Weights are used in connection with food estimates.

How to Plan a Diet

To illustrate the planning of a dietary, we will suppose a case of a very thin woman who suffers with the symptoms of autointoxication: Congestive headaches, coated tongue, constipation, etc. Her first need is to get rid of the autointoxication and then pull her weight up to normal. She finds by comparing her height in the women's table that she is under weight. She also notes the total number of food calories she needs daily, but in estimating the quantity and kinds of food, she must remember what we

have said about cutting down the protein supply and she must avoid foods liable to cause autointoxication. She will choose the laxative, antitoxic foods and by consulting the diet list, varied menus may be compiled consisting of the right proportion and correct number of calories.

TABLE SHOWING FOR DIFFERENT AGES THE NORMAL HEIGHT, WEIGHT, AND THE NUMBER OF FOOD UNITS OR CALORIES REQUIRED DAILY

BOYS

Age	Height in Inches	Weight in Pounds	Calories or Food Units
5	41.57	41.09	1,000
6	43.75	45.17	1,050
7	45.74	49.07	1,100
8	47.76	53.92	1,175
9	49.69	59.23	1,250
10	51.58	65.30	1,325
11	53.33	70.18	1,400
12	55.11	76.92	1,475
13	57.21	84.85	1,550
14	59.88	94.91	1,650

GIRLS

Age	Height in Inches	Weight in Pounds	Calories or Food Units
5	41.29	39.66	950
6	43.35	43.28	1,000
7	45.52	47.46	1,050
8	47.58	52.04	1,125
9	49.37	57.07	1,200
10	51.34	62.35	1,275
11	53.42	68.84	1,350
12	55.88	78.31	1,425

MEN

Height in In.	Weight in Pounds	Calories or		Food Units Carbohydrates	Total
		Proteins	Fats		
61	131	197	591	1,182	1,970
62	133	200	600	1,200	2,000
63	136	204	612	1,224	2,040
64	140	210	630	1,260	2,100
65	143	215	645	1,290	2,150
66	147	221	663	1,326	2,210
67	152	228	684	1,368	2,280
68	157	236	708	1,416	2,360
69	162	243	729	1,458	2,430
70	167	251	753	1,506	2,510
71	173	260	780	1,560	2,600
72	179	269	807	1,614	2,690
73	185	278	834	1,668	2,780
74	192	288	864	1,728	2,880
75	200	300	900	1,800	3,000

WOMEN

Height in In.	Weight in Pounds	Calories or		Food Units Carbohydrates	Total
		Proteins	Fats		
59	119	179	537	1,074	1,790
60	122	183	549	1,098	1,830
61	124	186	558	1,116	1,860
62	127	191	573	1,146	1,910
63	131	197	591	1,182	1,970
64	134	201	603	1,206	2,010
65	139	209	627	1,254	2,090
66	143	215	645	1,290	2,150
67	147	221	663	1,326	2,210
68	151	227	681	1,362	2,270
69	155	232	696	1,392	2,320
70	159	239	717	1,434	2,390

DIET TABLE

Diet List, Showing the Nutritive Value per Ounce of Various Foodstuffs Expressed in Calories, and the Number of Calories of Each Food Principle in an Ordinary Serving of Food.

Ounces in ordinary serving	Calories Per Ounce			
	Proteins	Fats	Carbohy- drates	Total
$\frac{1}{4}$ Almonds	24.5	146.4	20.2	191.1
$3\frac{1}{4}$ Apples, Baked .....	.6	1.3	28.4	30.3
$5\frac{1}{2}$ Apples, Fresh .....	.5	1.3	16.6	18.4
6 Apple Juice .....	.0	0	17	17
$3\frac{1}{2}$ Apple Sauce .....	.3	.8	20.65	21.78
$2\frac{3}{4}$ Apple Tapioca	2.6	.66	36	39.3
$3\frac{3}{4}$ Apple Tart	4.76	11.19	41.7	57.6
3 Apricots	1.3	0	15.6	16.9
$3\frac{1}{2}$ Apricot Sauce	1.2	0	20.5	21.7
$1\frac{3}{4}$ Asparagus (Cooked)	2.5	8.8	2.6	13.9
3 Asparagus in Cream	2.8	17	4.9	24.7
4 Asparagus on Toast	5.3	26.9	18.5	50.7
$3\frac{1}{2}$ Bananas	1.5	1.6	25.7	28.8
$3\frac{1}{2}$ Bananas, Baked	3.2	4.73	32.37	40.3
$1\frac{1}{4}$ Banana with Mayonnaise..	3.4	18.3	26.4	48.1
6 Barley Gruel	1.5	.7	10.2	12.4
$3\frac{1}{2}$ Barley, Pearl	2.97	.87	27.24	31.08
$4\frac{3}{4}$ Bean Broth	4.3	3.2	11.6	19.1
$4\frac{3}{4}$ Bean Broth (very thin) ..	2.8	0	.5	3.3
3 Bean Croquettes	8.74	11.78	33.2	53.72
$3\frac{1}{4}$ Beans, Baked	10	12.5	33.6	56
$3\frac{1}{4}$ Beans, Baked (Canned) ..	8	6.6	22.9	37.5
4 Beans, Butter	5.48	.8	17	23.28
$2\frac{1}{4}$ Beans, Green Lima	4.7	.8	17	22.5
$3\frac{1}{4}$ Beans, Kidney	8.2	.5	21.6	30.3
$2\frac{1}{4}$ Beans, Lima	9.5	1.8	34.6	46
$2\frac{1}{2}$ Beans, Navy (Cooked) ...	8.1	1.47	21.38	30.96
4 Beans, String (Cooked) ..	.9	2.9	2.2	6
4 Beans, Wax (Cooked)	1.2	.3	3.6	5.1

DIET TABLE — *Continued.*

Ounces in ordinary serving	Calories Per Ounce			
	Proteins	Fats	Carbohy- drates	Total
3 Beet Greens (Cooked) ...	2.6	9.1	3.7	15.4
2 $\frac{1}{4}$ Beets (Cooked)	2.7	.3	8.6	11.6
2 $\frac{1}{4}$ Beets, Sliced	2.7	.3	8.6	11.6
1 $\frac{1}{4}$ Biscuit, Beaten	8.4	47.3	79.2	134.9
2 $\frac{3}{8}$ Biscuit, Cream	10.3	27.5	49.6	87.5
1 Biscuit, Gluten	48.5	2.8	56.1	107.4
3 Blackberries	1.5	2.6	12.7	16.8
5 $\frac{3}{4}$ Blackberry Juice	0	0	30.3	30.3
3 Blackberry Sauce .....	.8	3.3	29.1	33.3
3 $\frac{1}{2}$ Blanc Mange, Chocolate ..	3.4	22.86	16.25	42.52
3 Blanc Mange, Cocoanut ..	3.8	36.4	17.3	57.5
2 $\frac{1}{2}$ Blanc Mange, Farina	4.16	21.56	18.6	44.4
5 Blood Oranges .....	.9	.5	13.5	14.9
2 $\frac{1}{4}$ Blueberries .....	.7	1.6	19.4	21.7
5 $\frac{1}{4}$ Blueberry Juice	0	0	18.9	18.9
4 $\frac{1}{2}$ Blueberry Sauce .....	.7	1.6	14.9	17.2
4 $\frac{3}{4}$ Bouillon, Tomato	3.62	7.98	4.77	16.37
4 $\frac{3}{4}$ Bouillon, Vegetable	7	4.3	7	18.3
$\frac{1}{2}$ Brazil Nuts	19.8	178.1	8.2	206.1
3 Bread Custard Pudding ..	8.75	46.08	67.24	122.07
2 Bread, Corn	8.5	12.3	52	72.8
2 Bread, Fruit	10.4	4.7	63.4	78.5
2 Bread, Gluten	10.8	3.7	58.1	72.6
2 Bread, Graham	10.4	4.8	60.8	76
2 Bread, Rye	10.5	1.6	62.1	74.2
2 Bread, White	9.3	3.7	63.4	76.4
2 Bread, Whole Wheat	11.3	2.4	58	71.7
4 $\frac{3}{4}$ Broth (Vegetable)	2.8	0	.5	3.3
3 $\frac{1}{2}$ Brown Betty	2.1	9.4	47	58.5
2 $\frac{1}{4}$ Brown Gravy	1.5	30.7	3.9	36.1
2 $\frac{1}{4}$ Browned Cream Gravy ...	7.4	32.65	13	53
1 $\frac{1}{4}$ Buns	7.3	17.3	66.8	91.4
1 $\frac{1}{4}$ Buns, Fruit	7.9	20.2	68.2	96.3
1 $\frac{1}{8}$ Buns, Nut	13.3	16.3	60.4	90

DIET TABLE—*Continued.*

Ounces in ordinary serving	Calories Per Ounce			
	Proteins	Fats	Carbohy- drates	Total
$\frac{1}{2}$ Butter (Dairy)	1.2	226.6	0	227.8
6 Buttermilk	3.5	1.3	5.6	10.4
3 Cabbage, Baked	4.2	10.26	4.1	18.56
$3\frac{1}{2}$ Cabbage, Baked in Tomato	1.18	2.38	3.39	6.95
4 Cabbage, Boiled .....	.8	6.1	1.9	8.8
$3\frac{3}{4}$ Cabbage, Creamed	1.5	8.1	3.7	13.3
4 Cabbage, Steamed .....	.8	3	1.9	5.7
2 Cake, Coffee	7.6	40.9	66.8	114.6
2 Cake, Frosted	6.8	24	74.9	105.7
3 Cake, Jelly Roll	5.8	9.4	85.2	100.4
$2\frac{1}{2}$ Cake, Layer	8.2	45.1	76.5	130.6
2 Cake, Nut	9.1	35.2	67.1	111.4
$1\frac{1}{2}$ Cake, Sponge	12.4	14.2	94.2	120.8
$6\frac{5}{8}$ Canteloupe .....	.7		10.9	11.6
$3\frac{3}{4}$ Carrots, Creamed	2.01	7.5	10.3	19.8
3 Cauliflower, Steamed	1	6.2	.3	10.2
1 Celery	1.3	.3	3.9	5.5
$3\frac{5}{8}$ Celery and Peas	3.3	8.7	8.7	20.7
$4\frac{1}{4}$ Celery, Stewed	1	6.87	3.92	11.79
2 Cheese, Cottage	19.9	12.4	5.1	37.3
$2\frac{1}{4}$ Cherries	1.2	2.2	19.5	22.8
3 Cherries, White	1.2	2.2	19.5	22.8
3 Cherry Sauce	1.2	2	29.4	32.6
$1\frac{1}{4}$ Chili Sauce	4.91	2.6	28.26	35.8
2 Cocoanuts	6.6	134.9	32.5	174
3 Corn Cake	13.9	28.8	52.8	95.6
$\frac{3}{4}$ Corn Flakes	10.8	1.4	91.3	103.5
$2\frac{3}{4}$ Corn, Green Sweet (Cooked)	3.6	2.9	22	28.5
2 Corn Pone	8	32.1	68.3	108.4
1 Crackers, Fruit	13.2	27.2	72.6	113.1
1 Crackers, Graham	11.7	25.1	86.1	122.9
1 Crackers, Oatmeal	13.3	29.6	80.5	123.8
1 Cackers, Whole Wheat ...	11.4	26	84.5	121.9

DIET TABLE — *Continued.*

Ounces in ordinary serving	Calories Per Ounce			
	Proteins	Fats	Carbohy- drates	Total
3 Cranberries (Cooked) ....	.2	.7	47.8	48.7
2 Cranberry Jelly .....	.4	1	49.7	51.1
2½ Cream	2.9	49.3	5.3	57.5
2½ Cream Sauce	3.7	22.9	9	35.6
2 Cucumbers .....	.9	.5	3.6	5
3 Currants, Red	1.8		14.9	16.7
1 Currant Jelly	1.2		90.1	91.3
3 Custard, Bread Pudding ..	8.75	46.08	67.24	122.07
3½ Custard, Plain	5.7	13	12.5	31.2
2½ Custard, Tapioca	4.5	17.6	26.4	48.3
3 Dandelion Greens (Cooked)	2.8	2.7	12.5	18
5½ Date Pie	7	24.1	26	57.1
1½ Dates	2.5	7.5	91.5	101.5
2 Dates, Stuffed	4.6	27.7	82.4	114.7
2 Dressing for Roasts	5	18.37	24.8	48.2
2½ Egg Mayonnaise Salad	13.37	30.66	.46	44.5
1½ Egg Plant	6.63	26.43	37.9	71
2½ Egg Sauce	4.8	22.7	8	35.5
1½ Eggs, Hard Jellied	16.3	32		48.3
1½ Eggs, Poached	16.3	32		48.3
2½ Eggs, Poached, on Toast ..	14.1	18.28	25.36	57.76
2 Eggs, Scrambled	14.1	23.7	1.45	39.25
1½ Eggs, Soft Jellied	16.3	32		48.3
2½ Eggs, Spanish	9.1	31.3	3.04	43.47
8 Eggnog, Milk	5.9	23	9	38
3 Endive	3.3	1	4.93	9.3
½ English Walnuts	19.4	169.2	18.2	206.8
3½ Farina	2.6	.8	18	21.4
2½ Fig Pudding	4.7	15.3	34.7	54.7
2 Figs .....	.5	8	86.6	92.4
2 Figs, Steamed	4.6	.6	73.9	79.1
3 Figs, Stewed	2.3	.4	49.4	52.1
½ Filberts	18.2	174.1	15.2	207.5
3 Floating Island	5.45	12.4	21.6	39.6

DIET TABLE — *Continued.*

Ounces in ordinary serving	Calories Per Ounce			
	Proteins	Fats	Carbohy- drates	Total
$\frac{1}{4}$ French Salad Dressing....	0	128	2.85	200.9
$2\frac{1}{2}$ Gooseberries, Stewed .....	.5		18.9	19.4
$3\frac{3}{4}$ Grape Fruit .....	.9	.5	11.8	13.2
6 Grape Juice	0	0	23.8	23.8
5 Grapes (Atwater)	1.16	3.2	16.6	20.9
3 Grapes, Cooked .....	.88	2.43	34.8	38.7
6 Gruel, Barley	1.48	.7	10.2	12.39
$6\frac{1}{2}$ Gruel, Corn Flakes .....	.7	.9	6.1	7.7
$6\frac{1}{4}$ Gruel, Corn Meal .....	.8	.4	6.8	8
$4\frac{3}{4}$ Gruel, Farina	1.4	.04	9.1	10.5
6 Gruel, Oatmeal	1.3	1.4	5.8	8.5
6 Gruel, Plain Gluten	3	.3	13.9	17.2
6 Gruel, Rice .....	.7	1.2	5.8	7.7
3 Hash, Potato and Celery..	2.66	9.66	21.0	33.3
$3\frac{1}{4}$ Hash, Potatoes and Onions.	2.35	10.79	17.63	30.7
$2\frac{1}{4}$ Hash, Vegetable	2.5	7.1	17.4	27
2 Hoecake	10	45.9	59.5	115.3
$4\frac{1}{4}$ Hominy	2.6	.5	20.7	23.8
$4\frac{1}{2}$ Hominy Grits	1.7	.4	14.5	16.6
$1\frac{5}{8}$ Honey .....	.5		94.7	95.2
$4\frac{1}{4}$ Hulled Corn	2.6	.5	20.7	23.8
$5\frac{3}{4}$ Hulled Wheat	3.3	1	22	26.3
3 Jelly, Cherry			16.6	16.6
$2\frac{3}{4}$ Jelly, Chocolate	3	14.9	17.4	35.3
2 Jelly, Cranberry .....	.38	1.01	49.7	51.1
3 Jelly, Cucumber .....	.52	.3	3	3.8
1 Jelly, Currant	1.2		90.1	91.3
3 Jelly, Lemon			30.57	30.57
$2\frac{1}{4}$ Jelly, Orange			36.4	36.4
3 Jelly, Orange and Pineapple	.43	.23	24.5	25.1
3 Jelly, Pineapple			41.06	41.06
$3\frac{1}{2}$ Jelly, Tomato	3.2	1.7	8.8	13.7
5 Kumyss	3.3	5.6	6.3	15.2
$1\frac{1}{4}$ Lemon Sauce			37.3	37.3

DIET TABLE — *Continued.*

Ounces in ordinary serving	Calories Per Ounce			
	Proteins	Fats	Carbohy- drates	Total
5½ Lemonade			14.2	14.2
3 Lentils (Cooked)	8.5	.3	22.9	31.7
1½ Lettuce with Lemon	1.1	.6	5	6.7
3 Macaroni and Tomato	5	3.86	17.16	26
2¾ Macaroni au Gratin	10.8	15.88	17.85	44.5
1 Maple Sugar	0	0	96.6	96.6
1½ Maple Sirup			83	83
1½ Mayonnaise, Cooked	6.87	67.1	2.85	76.8
6½ Milk, Skimmed	4	.8	6	10.8
6 Milk, Whole	3.8	11	5.8	20.6
¾ Nut Butter	34.2	124	20	178.2
¼ Nuts, Almonds	24.5	146.4	20.2	191.1
¼ Nuts, Almonds Salted	24.5	146.4	20.2	191.1
½ Nuts, Beech	25.5	153.1	15.4	194
½ Nuts, Butter	32.5	163.2	4.1	199.8
½ Nuts, Brazil	19.8	178.1	8.2	206.1
½ Nuts, Filberts	18.2	174.1	15.2	207.5
½ Nuts, Hickory	18	179.7	13.3	211
½ Nuts, Pecans	11.2	188	17.8	217.8
½ Nuts, Pine	39.5	131.7	8	179.2
½ Nuts, Pine Salted	39.5	131.7	8	179.2
½ Nuts, Walnut, Eng.	19.4	169.2	18.2	206.8
4¼ Oatmeal (Cooked)	3.3	1.3	13.4	18
1 Oatmeal Wafers	13.7	29.6	80.5	123.8
4¼ Oats, Rolled (Cooked)	3.3	1.3	13.4	18
½ Olive Oil	0	264.1	0	264.1
1½ Olives, Ripe (7)	2	69.1	5	76.1
4 Omelet	14	59	1	74
3 Onions, Baked	3.16	11.6	18.98	33.7
2½ Onions, Boiled	1.13	4.29	5.1	10.52
3 Onions, Creamed	1.73	14.6	5.6	21.9
3 Onions, Escalloped	3.21	11.02	10.43	24.66
4¼ Onions on Toast	4.1	12.8	18.3	35.2
5 Orange Juice	0	0	15.1	15.1

DIET TABLE — *Continued.*

Ounces in ordinary serving		Calories Per Ounce			
		Proteins	Fats	Carbohy- drates	Total
1	Orange Sauce	2.6	32.25	68.7	103.5
5	Oranges .....	.9	.5	13.5	14.9
5	Oranges, Blood .....	.9	.5	13.5	14.9
3	Parsnips, Browned	2	11.85	11.31	25.2
3	Parsnips, Creamed	2.56	6.5	17.29	26.35
2½	Parsnips, Escalloped	3.27	12.6	14.3	30.2
3	Parsnips, Mashed	1.7	5.9	9.5	17.1
3¾	Patties, Peas	13	18.4	23.4	54.8
2½	Patties, Rice	14.9	39.04	77.24	131.2
5	Peach Juice	0	0	20.8	20.8
4	Peaches, Fresh .....	.9	.3	11.6	12.8
3½	Peaches, Cooked .....	.9	.3	19.7	20.9
¾	Peanuts	30.1	102.9	8.5	161.5
6	Pear Juice	0	0	25.6	25.6
4	Pears .....	.7	1.3	16.5	18.5
4	Pears, Cooked .....	.7	1.1	23.3	25.1
3	Peas, Green	7.8	9.1	17.5	34.4
3	Peas, Purée	8.5	9	17.5	35
4½	Pie, Apple	7.5	18	37.2	62.7
4	Pie, Blackberry	8.18	14.36	43.1	65.64
3½	Pie, Blueberry	5.2	12.7	47.4	65.3
3½	Pie, Coconut Cream	6.46	23	31.31	60.77
4	Pie, Custard	4.9	16.8	30.5	52.2
4	Pie, Cherry	8.2	14.6	46	68.6
4	Pie, Date Cream	10.4	21.4	21.9	73.7
5¼	Pie, Date	7	24.1	26	57.1
4	Pie, Lemon	7.94	26.9	38.7	73.54
5	Pie, Mince	15.09	22.2	35.1	72.39
4	Pie, New England Cream	6.42	23.7	29.8	59.9
3¾	Pie, Orange (1-6 Pie) ...	11.39	19.31	35.67	66.3
5	Pie, Pumpkin	3.25	7.26	24.88	35.4
5	Pie, Raspberry	8.18	14.36	43.1	65.64
5½	Pie, Squash	4.27	22.7	36.5	63.5
4	Pineapple, Fresh .....	.5	.8	11.3	12.6

DIET TABLE — *Continued.*

Ounces in ordinary serving	Calories Per Ounce			
	Proteins	Fats	Carbohy- drates	Total
5 Pineapple Juice	0	0	21.8	21.8
3½ Pineapple Sauce .....	.5	.9	19.4	20.8
4 Plums	1.2		23.5	24.7
2¾ Plums, Sauce	1.1		36.3	37.4
½ Popped Corn	12.5	13.3	91.8	117.6
2¼ Potato Cakes	6.3	17.61	31.48	55.4
2 Potato Croquettes	6.3	17.61	31.48	55.4
2¼ Potato Salad	4.56	25.77	15.06	45.39
3 Potatoes, Baked	3.4	.4	28.9	32.7
3 Potatoes, Boiled	2.9	.3	24.4	27.6
3¼ Potatoes, Browned	3.5	5.17	29.4	38
3 Potatoes, Cream Baked ...	3.7	8.1	23.4	35
3½ Potatoes in Cream Sauce ..	3.2	12.87	18.74	34.8
4¼ Potatoes, Escalloped	3.6	10.7	21	35.3
3¼ Potatoes, Glazed	3.5	5.17	29.4	38
2¾ Potatoes, Hashed	2.8	13.4	22	38.2
2¾ Potatoes, Lyonnaise	3.17	7.42	26.6	37.2
3¼ Potatoes, Mashed	3	8	20.8	31.8
3½ Potatoes Mashed Sweet ...	3.5	5.6	49.1	58.2
3 Potatoes, Minced	3.02	10.96	21.55	35.5
3½ Potatoes, New, Creamed ..	3.2	12.87	18.74	34.8
3¼ Potatoes, Sliced in Cream.	3.94	17.92	15.48	37.34
3 Potatoes, Steamed	2.9	.3	24.4	27.6
3 Potatoes, Sweet, Browned .	4.11	11.25	59.7	75
¾ Prunes (Cooked) .....	.8	.3	26.4	27.5
2½ Pudding, Baked Indian ...	4.8	21.8	20	46.6
3½ Pudding, Bread Custard ..	6.44	32	19.12	37.56
3½ Pudding, Chocolate	4.95	23.5	30.38	58.83
3¼ Pudding, Cream Rice	4.25	22.1	19.63	45.98
2½ Pudding, Date	7.2	23.3	66.75	97.2
2¾ Pudding, Fig	4.7	15.3	34.7	54.7
3½ Pudding, Sago .....	.53	.73	27.17	28.4
2½ Pudding, Snow	4.78	9.22	16.37	30.38
2½ Pudding, Apple Tapioca ..	4.5	17.58	26.44	48.5

DIET TABLE—*Continued.*

Ounces in ordinary serving	Calories Per Ounce			
	Proteins	Fats	Carbohy- drates	Total
$3\frac{3}{4}$ Quince Sauce .....	.48	.51	19	20
1 Radishes	1.5	.3	6.7	8.5
1 Raisins	3	8.8	88.8	100.6
3 Raisins, Cooked	2	5.8	57.6	65.4
4 Raspberries, Fresh Black..	2	2.6	14.7	19.3
$3\frac{1}{4}$ Raspberries, Fresh Red ...	1.2		14.7	15.9
5 Raspberry Juice (Black)...	0	0	29.4	29.4
5 Raspberry Juice (Red) ...	0	0	23.7	23.7
$3\frac{1}{4}$ Raspberry Sauce, Black ...	1.6	2.2	27.5	31.3
$3\frac{1}{4}$ Raspberry Sauce, Red	1.2		22	23.2
1 Rice Biscuit	8.5	.9	96.6	106
4 Rice, Boiled	3.3	.3	28.5	32.1
$4\frac{1}{2}$ Rice, Browned	3.88	.34	39.72	43.94
$\frac{1}{2}$ Rice Flakes	8.5	.9	96.6	106
$\frac{1}{2}$ Rice, Puffed	9	.8	92	101.8
5 Rice with Raisins	2.99	.99	25.98	29.96
$4\frac{1}{4}$ Rice, Steamed or Creamed..	3.28	9.91	21.18	34.37
2 Rolls, Cream	11.4	22.5	83.5	117.4
4 Rutabagas, Mashed .....	.6	2.8	2.7	6.1
$1\frac{1}{2}$ Salad, Apple and Celery ..	2.26	4.27	26.16	32.69
$2\frac{1}{4}$ Salad, Banana Cherry Sauce	1.5	1.9	32.5	35.9
$1\frac{1}{4}$ Salad, Banana Mayonnaise	3.4	18.3	26.41	48
$1\frac{1}{2}$ Salad, Beet and Lemon ...	.97	.10	3.6	4.7
$2\frac{1}{4}$ Salad, Beet and Potato ...	4.27	16.56	14.21	35
$2\frac{1}{4}$ Salad, Cabbage .....	.63	2.35	2.8	5.78
2 Salad, Cauliflower	2.5	19.7	3	25.1
2 Salad, Chopped Cabbage ..	1.9	18.2	17.2	37.5
$2\frac{1}{4}$ Salad, Date and Apple ...	2.5	5.8	45.8	54.1
$1\frac{1}{4}$ Salad, Date and Walnut ..	5.9	34.8	58.6	99.3
$\frac{1}{2}$ Salad Dressing, French ...	0	198.07	2.85	201
$2\frac{1}{4}$ Salad, Egg Mayonnaise ...	13.37	30.66	1.46	44.5
$2\frac{1}{4}$ Salad, Fruit	1.98	2.53	26.8	31.3
$1\frac{1}{4}$ Salad, Lettuce with Lemon	1.1	.6	5	6.7
3 Salad, Peas and Celery ...	6.24	16.02	12.5	34.8

DIET TABLE — *Continued.*

Ounces in ordinary serving		Calories Per Ounce			
		Proteins	Fats	Carbohy- drates	Total
2 $\frac{1}{4}$	Salad, Potato	4.56	25.77	15.06	45.39
1 $\frac{1}{4}$	Salad, String Bean .....	.7	51.7	2.3	54.7
4	Salad, Tomato with Mayonnaise	1.8	10.6	4.4	16.9
2 $\frac{1}{4}$	Salad, Vegetable	4.3	4.8	9.2	18.3
1 $\frac{1}{2}$	Sandwich, Baked Bean ...	4.27	19.4	23.9	47.57
1 $\frac{1}{2}$	Sandwich, Cottage Cheese.	11.2	33.9	37.6	82.8
1 $\frac{3}{4}$	Sandwich, Egg	10	50.12	39.09	99.29
1 $\frac{3}{4}$	Sandwich, Fig	6.08	30.47	53.66	90.22
1 $\frac{1}{2}$	Sandwich, Jelly	7.4	38.6	70.61	116.6
1 $\frac{1}{2}$	Sandwich, Lettuce	6.8	38.2	37	82
2 $\frac{1}{4}$	Sandwich, Salad	5.07	28.2	28.5	61.9
	Spaghetti	9.86	15.98	25.34	51.19
4 $\frac{3}{4}$	Soup, Bean	9.4	4	24.7	38.1
4 $\frac{3}{4}$	Soup, Clear Tomato	3.1	7	8.9	19
4 $\frac{3}{4}$	Soup, Cream of Asparagus	3.24	18.33	4.57	26.14
4 $\frac{3}{4}$	Soup, Cream of Barley ...	2.1	14.76	7.16	24
4 $\frac{3}{4}$	Soup, Cream of Browned Onion	3.11	21.34	8.35	32.8
4 $\frac{3}{4}$	Soup, Cream of Celery	2.8	19	4.7	26.5
4 $\frac{3}{4}$	Soup, Cream of Corn	3.5	18.5	10	32
4 $\frac{3}{4}$	Soup, Cream of Lentil	6.1	14.6	13.2	33.9
4 $\frac{3}{4}$	Soup, Cream of Lettuce...	5.37	28.85	9.68	43.9
4 $\frac{3}{4}$	Soup, Cream Lima Bean ..	6.76	14.4	21.69	42.85
4 $\frac{3}{4}$	Soup, Cream of Pea	5.9	18	13.2	37.1
4 $\frac{3}{4}$	Soup, Cream of Potato	2.7	19.2	9	30.9
4 $\frac{3}{4}$	Soup, Cream of Rice	2.9	17	8.8	28.7
4 $\frac{3}{4}$	Soup, Cream of Spinach...	3.55	22	6.45	32
4 $\frac{3}{4}$	Soup, Cream of Split Pea .	6.3	14.6	14.5	35.4
4 $\frac{3}{4}$	Soup, Cream of Tomato ...	2.8	20	5.96	28.76
4 $\frac{3}{4}$	Soup, Kidney Bean	11.25	9.48	21.38	42.1
4 $\frac{3}{4}$	Soup, Lentil	5.06	.46	11.79	17.38
4 $\frac{3}{4}$	Soup, Lima Bean	6.58	1.26	24.16	32.01
4 $\frac{3}{4}$	Soup, Navy Bean	9.4	4	24.7	38.1

DIET TABLE—*Continued.*

Ounces in ordinary serving		Calories Per Ounce			
		Proteins	Fats	Carbohy- drates	Total
4 $\frac{1}{4}$	Soup, Pea Green	4.8	14.5	7.8	27.1
4 $\frac{3}{4}$	Soup, Split Pea	7.18	1.85	18.07	27.1
4 $\frac{3}{4}$	Soup, Tomato Bisque	3.1	10.5	2.4	16
4 $\frac{3}{4}$	Soup, Vegetable .....	.96	5.71	6.9	13.5
3	Spaghetti and Tomato	5	3.86	17.16	26.02
3	Spinach	3.3	1	4.93	9.3
3 $\frac{1}{2}$	Spinach, Creamed	3	13.1	5.2	21.3
4	Spinach on Toast	5.3	28	18.7	52.1
3	Spinach Soufflé	6.4	19.3	6.7	32.4
2 $\frac{1}{2}$	Squash, Baked	1.6	2.2	16	19.8
3 $\frac{3}{4}$	Squash, Steamed or Canned	1	1.3	12.3	14.6
4	Strawberries, Fresh	1.2	1.6	8.6	11.4
5	Strawberry Juice	0	0	24.5	24.5
3 $\frac{1}{2}$	Strawberry Sauce .....	.9	1	22.7	24.6
$\frac{1}{5}$	Sugar (Granulated)	0	0	116.6	116.6
3 $\frac{1}{2}$	Sweet Potatoes (Cooked) ..	3.5	5.6	49.1	58.2
5	Tangerines .....	.9	.5	13.5	14.9
5	Toast, Apple	1.4	3.48	27.2	32.08
5	Toast, Apricot	2.2	2.7	27.1	32
5	Toast, Banana	3.2	15.9	22.4	41.5
5	Toast, Blackberry	1.86	5.7	34.8	42.36
5	Toast, Blueberry	1.95	9.23	23.9	35.08
5	Toast, Cream	4.15	29.9	13.6	47.65
5	Toast, Grape	1.14	2.63	32.8	36.57
5	Toast, Peach	1.5	2.45	24.3	28.3
5	Toast, Prune	1.86	3	32.38	37.24
5	Toast, Red Raspberry	2.2	2.7	28.4	33.4
5	Toast, Strawberry	1.95	3.65	29	34.65
5	Toast, Tomato	2.26	3.2	16.2	21.66
4 $\frac{1}{2}$	Toast, Tomato Cream	5.16	28.8	21.4	55.4
3	Tomatoes Baked on Toast.	4.77	9.69	20.2	34.66
3 $\frac{1}{2}$	Tomatoes, Breaded	1.3	4.5	7.9	13.7
2 $\frac{1}{2}$	Tomatoes, Stewed or Canned	1.4	.5	4.7	6.6

DIET TABLE — *Continued.*

Ounces in ordinary serving	Calories Per Ounce			
	Proteins	Fats	Carbohy- drates	Total
4 Tomatoes, Sliced	1	1.1	4.6	6.7
3 Turnips, Creamed	2.18	4.6	10.9	17.7
4 Turnips, Mashed .....	.6	2.8	2.7	6.1
1½ Watercress	1.4	.8	3.4	5.6
8 Watermelon .....	.5	.5	7.8	8.8
5¾ Wheat, Cracked	3.3	1	22	26.3
¾ Wheat Flakes, Toasted	11	3.9	88.9	103.8
4 Wheat Grits (Cooked) ...	2.1	1	15.3	18.4
5¾ Wheat, Hulled	3.3	1	22	26.3
7 Whey	1.2	.8	5.8	7.8
½ Whipped Cream	2.9	49.3	10.14	62.3
1 Whole-wheat Wafers or Crackers	11.4	26	84.5	122.7
1 Zwieback	11.4	26.4	85.8	123.6

FLESH FOODS *

3½ Beef Juice	5.42	1.71	0	7.13
2½ Beef, Roasted (Fat)	18.14	136.85	0	155.26
2½ Beef, Round (Boiled, Lean)	40.9	4.54	0	45.6
6 Bouillon	2.3	.3	3	3
3½ Chicken (Broilers)	24.6	6.56	0	31.16
3½ Clams	7.5	1.08	0	8.58
5 Cod Fish	19.3	1.02	0	20.32
2½ Goose	18.1	95.4	0	113.5
3 Halibut (Steak)	21.78	13.9	0	35.68
2 Lamb Chops (Boiled)	25.3	79.7	0	105
3½ Lamb (Leg, Roast)	22.2	33.3	0	55.5
3 Liver (Veal)	21.78	13.9	0	35.68
2 Lobsters	19	4.8	0	23.82
2½ Mutton (Leg, Boiled)	29.1	54.1	0	83.2
3½ Oysters	7.2	3.23	0	10.43

* The Flesh Foods Table is given in order that the meat values may be compared with the more wholesome vegetable and grain values when balancing a meatless diet.

DIET TABLE — *Continued.*

Ounces in ordinary serving	Calories Per Ounce			
	Proteins	Fats	Carbohy- drates	Total
1 Pork (Bacon, Smoked Medium Fat)	11.3	177.3	0	188.6
2½ Pork (Ham, Boiled)	25.4	65.4	0	90.3
3 Pork (Loin, Chops)	18.5	84.5	0	103
2½ Salmon (California)	20.4	46.6	0	66.6
2½ Shad	21.9	25.71	0	47.61
1¾ Trout (Brook)	22.2	55.5	0	77.7
1½ Turkey	24.1	59.1	0	83.2
2½ Veal (Leg, Boiled)	30.4	11.2	0	41.6

NUMBER OF FOOD UNITS OR CALORIES PER OUNCE
OF VARIOUS UNCOOKED FOODSTUFFS

None of these are served in the uncooked state. The value is given only for the purpose of comparison of actual food values.

	Proteins	Fats	Carbohy- drates	Total
Almond Meal	26.0	152.8	21.4	200.2
Artichokes	3.0	.5	19.5	23.0
Asparagus	2.1	.5	3.9	6.5
Barley, Pearled	9.9	2.9	90.8	103.6
Beans (dried)	26.3	4.8	69.5	100.6
Beans, Butter (green)	11.0	1.6	34.0	46.6
Beans, Lima (dried)	21.1	4.0	76.9	102.0
Beans, Soja	38.4	48.3	33.5	120.2
Beets	1.9	.3	11.3	13.5
Beans, String	2.7	.8	8.6	12.1

	Proteins	Fats	Carbohy- drates	Total
Buckwheat	7.5	3.2	90.0	100.7
Cabbage	1.9	.8	6.5	9.2
Carrots	1.3	1.1	10.9	13.3
Cauliflower	2.1	1.3	5.5	8.9
Cocoa	25.2	77.1	44.0	146.3
Corn, Green	3.6	2.9	23.0	29.5
Cornmeal	10.7	5.1	87.9	103.7
Cornstarch			105.0	105.0
Cranberries .....	.6	1.6	11.5	13.7
Egg Plant	1.4	.8	6.0	8.2
Farina	13.0	3.7	89.0	105.7
Flour, Corn	8.3	3.5	91.5	103.3
Flour, Graham	15.5	5.9	83.3	104.7
Flour, Rye	7.9	2.4	91.8	102.1
Flour, Wheat (Entire Wheat)	16.1	5.1	83.8	105.0
Flour, Wheat (Fine White)	9.2	3.7	89.1	102.0
Flour, Wheat (Gluten)	16.6	4.8	83.0	104.4
Flour, Wheat (Patent)	12.6	2.9	87.7	103.2
Gooseberries .....	.5		10.4	10.9
Gluten Meal (20 per cent.)	18.4	1.7	83.6	103.7
Hominy	9.7	1.6	92.2	103.5
Kohl-rabbi	2.3	.3	6.4	9.0
Lemons	1.2	1.9	10.1	13.2
Lemon Juice	0	0	11.4	11.4
Lentils	30.0	2.7	69.1	101.8
Macaroni	3.5	4.0	18.4	25.9
Mushrooms	4.1	1.1	7.9	13.1
Oatmeal	18.8	19.2	78.8	116.8
Oats, Rolled	19.5	19.5	77.2	116.2
Onions	1.9	.8	11.6	14.3
Parsnips	1.9	1.3	15.8	19.0
Peanuts	22.8	77.6	21.6	122.0
Peas (dried)	28.7	2.7	72.3	100.7
Peas, Green	8.2	1.3	19.7	29.2
Potato Meal	11.3	1.0	97.0	109.3

	Proteins	Fats	Carbohy- drates	Total
Potatoes	2.6	.3	21.5	24.4
Prunes	2.5	0	85.8	88
Pumpkin	1.2	.3	6.1	7.6
Radishes	1.5	.3	6.8	8.6
Rice	9.0	.8	92.0	101.8
Spinach	2.5	.8	3.7	7.0
Squash	1.6	1.3	10.5	13.4
Sweet Potatoes	2.1	1.9	32.0	36.0
Turnips	1.5	.5	9.5	11.5
Vegetable Oysters or Salsify	1.0	5.3	4.1	10.4
Wheat, Cracked	13.0	4.5	88.1	105.6
Wheat Grits	12.3	5.3	88.7	106.3

CHAPTER XI

Hydrotherapy: The Water Cure for Headache

Any one who is a headache sufferer must realize that the cure depends upon hygienic living and the intelligent use of physiologic remedies — the health forces present in pure air, sunshine and water — rather than upon the drug medicines so commonly resorted to.

The methods of using water as a remedy will be explained later. The writer lays special emphasis upon the water treatment in headache — fomentations, compresses and baths. It is a quick and harmless remedy for this distress, and though always at hand, it is seldom appreciated or used. Headache powders, effervescent mixtures, opiates — every sort of poison is taken — often to one's lasting misery — although clean water, hot or cold, is the best remedy in the world.

When one thinks of hydrotherapy, or the use of water as a remedy for diseased conditions, he commonly thinks of baths or some sort of external appli-

cation of water. The body very quickly responds to the application of water, and why should it not when one considers that the area of the skin in an adult is from twelve to sixteen square feet and that it contains blood-vessels, nerves and absorbent vessels?

The results of water applications differ according to their temperature and duration, and whether the treatment is general or local. No ordinary home is equipped with the elaborate apparatus for giving water treatment as are hospitals and sanitarium where it is a feature; but water may be efficiently used in any home at practically no extra expense. Of course, it takes more time and is some more work than to swallow a pill, or take a dose of some drug mixture. That the effect upon the body is more beneficial and lasting, however, there is no doubt — in the majority of cases — and that is the desired end of any curative means.

The Properties of Water

Before describing the different baths and applications, let us remember that water exists in three states: liquid, solid and vapor, therefore water, ice, and steam or mist. Below 32°F. water is in the form of ice, between 32° and 212°F. it is a liquid and at 212°F. it becomes vapor. At all temperatures below 212°F. water slowly evaporates; that is, it is held in solution in the air. Water absorbs

more heat by elevation of temperature than any other substance, and readily communicates heat to bodies with which it comes in contact. One of the most useful properties of water is its power to dissolve substances: it is a nearly universal solvent. That is why it is such a cleansing agent and that is why it is such an aid in nutrition; it dissolves and circulates the nourishing elements required by the body, and washes from the tissues the waste products.

The effects of water upon the human system when applied externally, are the results of its physical properties combined with the action of the vital forces. It is the heat and the cold in the water that does the good, and not the water itself. Water is only a vehicle for temperature, a conveyance for external stimuli. By making impressions on the outside of the body with heat and cold, the functions of the organs on the inside of the body may be changed — increased or decreased as the needs of the body require. Age, sex and physical condition have to be taken into account when using water, either internally or externally. It is astonishing how often we come upon the three-fold aspect in considering any subject. Just as water appears in three forms, so also it affects the body through three different means: by modifying the general or local temperature of the body, by its solvent properties and as a diluent.

The Internal Use of Water

Water is received into the system as diluent by means of absorption through the mucous membrane or the skin and it usually enters by the mouth, stomach and intestinal canal. When received into the blood, it increases blood volume, makes it more fluid, and so circulation is quickened by this blood dilution. It is of importance that the blood should be supplied with a sufficient quantity of fluid, especially during the hot season when the watery portion of the blood is quite rapidly lost through perspiration.

People who are exposed to artificial heat or who exert any effort that produces perspiration, require much water. The importance of pure drinking water cannot be over-emphasized because of its intimate relations with the blood circulation. Water does not remain long in the body; it is a transient element, and for that reason has to be more constantly renewed than any other element necessary to health and life except air. The water is eliminated by the skin, lungs, kidneys and intestines.

As a solvent, water dissolves and excretes the various poison products of the tissues. The removal, in this way, of all the body waste quickens the normal functions and frees the vital forces from what would otherwise hinder their activities.

Water Is Essential to Life

It is water that hastens all the life processes and keeps up the constant change in tissues necessary to our health and growth.

Of course, both the diluent and solvent action of water is obtained by using it as a drink, although water forms a large proportion of much of the food materials. It is easy to understand why people who drink but little water unless it contains tea, coffee or alcohol suffer more or less with various ailments. The body is constantly asking for pure water and it gets these poisons instead. Is it not plain, since headache is so constant a symptom of disease and that an abundance of pure water removes from the body poison material, that the drinking of pure water is really one very important headache preventive and remedy? The fact is, we have dosed our disorders so much and so long, that it is very hard to believe so simple and easily obtained a remedy will help us. Let me assure you that water internally and externally works wonderful cures. It is Nature's most powerful aid in health restoration. Most people drink too little water. Two quarts daily should be taken in most cases, a glassful at a time, between meals; in hot weather one may drink more than two quarts. Do not drink water too near a meal — one hour before, and two hours after, is a good rule.

The External Use of Water

Now we come to the external use of water — the application of heat and cold with water. In giving baths, it is necessary to use a bath thermometer in order to know the exact temperature of a bath; it is a very inexpensive article and saves time and guessing. If one has not a thermometer, the bath may be tested with the hand. A more reliable way is to plunge the forearm in the water; if the skin quickly reddens, the water is hot, and when it feels comfortable, the water is warm; when it chills the arm or causes goose-flesh, it is cold. What is hot to one, may not feel quite the same to another and then, too, the sensation of heat and cold varies in the individual at different times. However, the "arm test" is quite dependable. According to their temperature, baths are divided into six classes:

1. Cold	33° to 60°F
2. Cool	60° to 70°F
3. Temperate	70° to 85°F
4. Tepid	85° to 92°F
5. Warm	92° to 98°F
6. Hot	98° to 112°F

For convenience, we will speak of them as cold applications under 85°F., warm between 85° and 98°F., and hot above 98°F.

Bathing and Treatment Rules

There are certain rules to observe in bathing; it is possible to do harm as well as to relieve, and much discredit has fallen upon the use of water as a remedy because of a disregard of these rules:

1. Avoid a full hot or cold bath within two or three hours after a meal. Such local baths as fomentations, compresses, foot baths, and even sitz baths, may be taken an hour or two after a meal; indeed, compresses and fomentations may be applied immediately after a light meal without injury and often with benefit.

2. Employ the thermometer to determine the temperature of every bath when possible to do so; if not, employ the arm test.

3. The temperature of the room during a bath should be 75° to 85°F. Invalids require a warmer room than persons in health. Thorough ventilation is an important matter; but drafts must be carefully prevented, by screens placed before openings into the room when necessary.

4. Never apply either very cold or excessively hot treatment to aged or feeble patients. Cold is especially dangerous. Hot baths are rarely useful in health. The warm bath answers all the requirements of cleanliness.

5. Never take a cold bath when exhausted or chilly.

No harm will result from a cool bath if the body is simply warm, even though it may be in a state of perspiration. Contrary to the common opinion, a considerable degree of heat is the best possible preparation for a cold bath. The Finlanders rush out of their hot ovens—sweat houses—and roll in the snow, without injury. Athletes take cool showers after exercise.

6. Cold baths should not be administered during the period of menstruation in females—unless there is fever with an extremely high temperature. At such times, only the regular cleansing bath is advisable, unless special water treatment is advised by a physician.

7. Nurses or bath helpers should carefully avoid giving “shocks” to nervous people, to those inclined to apoplexy, or to those affected with heart or kidney disease. Shocks are unpleasant and unnecessary for any one. In these cases cold may be carefully applied with cold mitten friction or wet towel rub. Get the patient used to these cold rubs gradually, beginning with a tepid wet mitten or towel.

8. Never apply to the head such treatment as will cause shock—as the sudden cold douche, shower, or spray bath.

9. In applying a general bath to sick persons, it should always be made of a temperature agreeable to the feelings.

10. The temperature of a warm or hot bath should always be decreased just before its termination, as a precaution against taking cold.

11. Very cold and very hot baths are seldom required. No good results from them which cannot be attained by milder means, and much harm may be done.

12. Those not strong and vigorous should avoid drinking freely of cold water just previous to a bath.

13. The head should always be wet before any bath; and the feet should be warmed — if not already warm — by a hot foot bath, if necessary.

14. A light hand bath every morning will be none too frequent to preserve scrupulous bodily cleanliness. More than a week should never be allowed to elapse without a warm water and soap bath. Two a week is better.

15. One very important element in the success of a bath is the dexterity of the helper. The patient should be inspired with confidence both in the bath and in the skill of the attendant. The mind has much to do with the effect of a bath just as it has with all our bodily processes.

16. Patients should receive due attention during a bath, so that they may not feel that they are forgotten. Nervous patients often become very apprehensive on this account, if left alone. It is also important, in most cases, that a reasonable degree of

quietude should be maintained. Quiet tends to recuperation, always.

17. When any unusual or unexpected symptoms appear during a bath, the patient should be removed at once. In case symptoms of faintness appear (as is sometimes the case in feeble patients) during a hot bath, apply cold water to the head and face, give cool water to drink, lower the temperature of the bath by adding cool water, and place the patient as nearly as possible in a horizontal position.

18. In general baths, the patient (unless feeble) will derive benefit by assisting himself as much as possible.

19. The best time for treatment — especially cool treatment — is about three hours after breakfast.

20. In health, a cool or cold bath should be very brief, lasting not more than a few seconds to one or two minutes. A tepid bath should not last more than ten or fifteen minutes. A warm or neutral bath may be continued fifteen to thirty minutes, or as long as may be necessary to secure the desired result. Of course, certain baths may be advantageously prolonged under a physician's advice, in cases of disease.

21. It is of extreme importance that the patient should be carefully dried after any bath. A large sheet is much better for this purpose than a towel. An old linen or cotton sheet is preferable to a new

one, being softer. Many people prefer a sheet of Turkish toweling.

22. A patient should never be left chilly after a bath. Rub until warm. It is equally important that the body should not be left in a state of perspiration, for it will soon become chilly.

23. Patients who are able to do so, should exercise a little both before and immediately after a cool bath, to insure thorough reaction.

24. For feeble persons, an hour's rest in bed after a bath will add to its beneficial effects.

25. If a bath is followed by headache and fever, there may have been something wrong, either in the kind of bath administered, or in the manner of giving it. Headache indicates the use of either too great heat or cold, producing too violent a reaction. Proper baths given for headache leave the patient relieved.

26. Always employ for bathing purposes the purest water attainable. Soft water is greatly preferable to hard on many accounts.

How to Apply Water

It seems to be a common idea that it makes little difference how water is applied, provided the patient is only wet. Warm, hot, tepid, temperate, neutral, cool, and cold baths are used indiscriminately. So, also, the different modes of administer-

ing baths of the same temperature are disregarded in many cases. As we have previously stated, it is the heat or cold carried by the water that does the good. The neutral bath — neither hot nor cold — acts as a sedative. It is non-stimulating.

In general, each particular form of bath is especially adapted to the treatment of special conditions.

Too much bathing is likely to be the error into which one falls, rather than the opposite extreme. Nature cannot be forced to do more than she is capable of doing; and as Nature must do the healing, if a cure is accomplished, remedies should be helpful rather than crowding or forcing.

The vitality of patients may be expended uselessly by treatment; for baths excite vital reactions, a fact which many overlook. The dangers of over-treatment are not so great as some imagine, however, who take the opposite extreme, and advocate rest as the great cure-all. We have seen patients who seemed to be quite monomaniacs on the subject of "rest cure," who needed a good thorough stirring up with useful exercise more than any other kind of treatment.

Briefly, remedial water applications are derivative, sedative, eliminative or tonic in effect. Tonic treatments are best taken in the morning and may be very hot or cold, *of very short duration*, as described later.

Alternating heat and cold are most invigorating. Sedative or quieting treatments are best given at night — the “neutral” bath and the warm bath.

Eliminative treatments are the sweating measures that hasten the elimination of poisons. Derivative treatments reduce congestion and are best at night, but may be taken at any time. For instance, in congestive headaches, the hot foot bath, or the hot hip and leg pack, with a cold compress on the head, are derivative treatments.

In describing methods of applying water as a remedy, the writer has selected such baths as are especially useful in disorders when headache is a prominent symptom.

The technic of even the simple sponge bath is given, because there is a right way, or a best way, to do everything and there are thousands of people who not only do not know how properly to take a bath but could not possibly administer one. Many a headache sufferer, too sick to wait on himself, would be relieved if some one in the family knew just how to give the water treatment. It is not hydrotherapy to splash about in, or with, water. But when water is used intelligently, it is a great remedy for pain — for headache.

The water applications which usually give quickest relief in headache have been indicated under the various types of this distress. Where dry heat is pre-

ferred by the patient, or is more convenient, the hot water bottle, hot stones, or bricks, flat-irons and heated plates are all satisfactory.

Foot Baths

Any vessel sufficiently large to receive the feet, and enough water to cover them to the ankles, is suitable for this bath.

The alternative hot and cold foot bath is a very valuable remedy for cold feet, and is an excellent remedy for chilblains. It is given thus: Place the feet in hot water—100°F. and heat rapidly to 115°F.—for two or three minutes. Then withdraw them and plunge them quickly into a bath of cold water, 60°F. or less. After one-half minute, restore them to the hot bath. Thus alternate three or four times, and conclude by dipping the feet quickly into cold water and wiping dry. This bath produces most powerful reaction.

The hot foot bath, or alternating hot and cold, is applicable in the treatment of headache, neuralgia, toothache, catarrh, congestion of abdominal and pelvic organs, colds and cold feet. For headache, the foot bath should be 115°F. for ten or fifteen minutes. It is very useful as preparatory for other baths, and as an accompaniment of other local applications.

The hot, and alternating hot and cold, foot baths are exceedingly valuable remedies in the treatment of

congestive headaches occurring from any cause; such as headaches with colds in the head, the headaches of fevers, of worry, monotony, or excessive mental activity, and the headaches associated with insomnia. They are also valuable in so-called "sick headache" or migraine.

Sponge Bath

The sponge or hand bath is perhaps the simplest and most useful mode of applying water to the surface of the body; for it requires the use of no appliances which every one does not possess, and it can be employed by any one without elaborate preparation, and under almost any circumstances. A great quantity of water is not required; a few quarts is a plenty, and a pint will answer admirably in an emergency. A soft sponge, or a linen or cotton cloth, and one or two soft towels, or a sheet, are the other requisites. The hand may be used for bathing in the absence of a cloth or a sponge.

The temperature of the bath should not be above 95°F. and 90°F. is generally better. Most people can habitually employ a temperature of 75°F. without injury. The use of a much lower temperature is not commonly advisable.

Wash the face, then the neck, chest, shoulders, arms, trunk, back, and then the legs. Rub vigorously until the skin is red, to prevent chilling; for

even when the temperature of the room is nearly equal to that of the body, the rapid evaporation of water from the surface will lower the external temperature very rapidly unless a vigorous circulation is maintained.

After thoroughly bathing the upper portion of the body, turn the attention to the lower portion, continuing the rubbing of the upper parts at brief intervals to prevent chilliness. As soon as the bathing is concluded, envelop the body in a sheet and rub dry, or dry the skin with a towel. When the surface is nearly or quite dried, rub the whole vigorously with the bare hand.

The bath should not be prolonged more than ten or fifteen minutes. Five minutes is sufficient to secure all the benefits of the bath.

Persons who chill easily will find it better to bathe only a portion of the body before drying it. Some will even find it necessary to retain a portion of the clothing upon the lower part of the body while bathing and drying the upper part.

Feeble patients may receive this bath with very little disturbance, even in bed. Only a small portion of the body should be uncovered at a time, being bathed, dried, rubbed, and then covered while another part is treated in a similar manner.

The sponge bath may be administered anywhere without danger of soiling the finest carpet, by using

care to make the sponge or cloth nearly dry before applying it to the body. A rug may be spread upon the floor as an extra precaution. When used for cleanliness — as it should be daily — a little fine soap should be added two or three times a week, to remove the oily secretion from the skin.

This bath is applicable whenever there is an abnormal degree of bodily heat, and in such cases may be applied every half-hour without injury, and even oftener. It is useful in cases of nervousness and sleeplessness. In fact, whenever water is required in any form, this bath may be used with advantage, the temperature being suited to the case. Hot sponging of the face, neck, and head are useful in relieving the headache of catarrh and influenza.

The tepid, or cool, sponge bath is very useful in promoting general comfort of the body, and as a tonic to improve the general health and tone of the body. In accomplishing this, the sponge bath may be a valuable aid in relieving or curing chronic headaches.

Sweating Pack

Wrap the patient in woolen blankets, a wet blanket between two dry blankets. Place at his hands, sides, thighs, and feet, hot bricks, jugs, or rubber bags filled with hot water, wrapped with moist flannels. Bottles filled with hot water and covered with wet stockings are very convenient. Give frequent and

copious draughts of hot water; the water may be flavored with fruit juice or peppermint essence. Keep the head cool by cold compresses. In a few minutes, most copious perspiration will be produced. This pack is useful in all cases in which powerful action of the skin is desirable, as in chronic rheumatism, obesity, jaundice, etc. It is one of the most excellent means of curing a cold.

This remedy is very useful in treating the headache of fevers — such as malaria, or the beginning of typhoid fever, or other fevers when the body has not been weakened by prolonged fever. It is also useful in toxic headaches such as occur in rheumatism, gout and chronic intestinal autointoxication. The usual enema should be given before applying the pack.

Full Bath

For this bath, a tub is required the length of the body, about eighteen inches deep, two feet wide at the top, and, preferably, six inches narrower at the bottom. Place in the tub sufficient water so that the patient will be entirely covered (with the exception of the head) when he lies upon his back. During the bath, the body should be vigorously rubbed by the bather or an attendant, or both, particular pains being taken to knead and manipulate the abdomen, in a gentle but thorough manner. The temperature of the bath, when taken for cleanliness, or for its sooth-

ing effects, should be not higher than 95° to 98°F. and it should be cooled down to about 85° or 90°F. before the conclusion of the bath, by the addition of cool water.

Very cold baths are used by some, especially in Germany, in the treatment of fevers, so low a temperature as 60°F. being often employed. The most approved mode, however, is what is called the graduated bath, in which the temperature is gradually lowered until the desired effect has been produced.

When used to excite action of the skin, a hot bath should be employed. Begin the bath at 98° or 100°F., and gradually raise it to 108° or 110°F., continuing about ten minutes. Then remove the patient, wrap him in blankets, and let him remain sweating one-half to one hour.

Every family ought to possess conveniences for the full bath. Indeed, it is now found in every well-regulated modern house in our large cities. It is not so expensive but that any one can possess it. Portable baths of rubber can be obtained, which are worth many times their cost. A stationary bath may be made of wood, of the dimensions given, and lined with lead or zinc. There should be an opening in the lower end for withdrawing the water.

The full bath is one of the most refreshing of all baths, being also one of the most pleasant. Employed at a low temperature, it is a powerful means

of reducing excessive heat in fevers. The hot full bath very greatly relieves the pains of acute rheumatism, colic, gall-stones, and sciatica, and is almost a specific for colds, if taken soon after their contraction, just before retiring. The full bath is useful for the same types of headache for which the sweating pack is used.

Very hot and very cold temperatures are quite hazardous with this bath, since it involves so large a portion of the body. Such extremes are rarely useful in any case, and should not be used except under the eye of a physician.

The hot full bath is also useful in relieving congestive headaches, sick headaches and headaches due to exposure to cold or dampness when the body has been in any way chilled. As this bath increases the activity of the skin, it is also useful in toxic headaches.

The warm bath — of ten to twenty minutes' duration — with cold compresses applied to the head, is useful in relieving headaches of insomnia, general nervousness, congestive headaches from any cause, and sick headaches.

The neutral bath, 96° F., with cold compresses to the head, taken from fifteen minutes to one hour, is very useful in insomnia, general restlessness and the headaches associated with insomnia.

Half Bath

The half bath, either warm or hot, is much the same as the full bath. The bather sits upright with his limbs extended. The water should be at least a foot deep. During the bath, the body should be well rubbed, and water should be poured over the upper portion of the body. Its general effects are nearly the same as those of the full bath, and it may be used for the same general purposes. A little more vigorous rubbing is required to prevent chilling, as so large a portion of the body is exposed. It affords a better opportunity for exciting action in the bowels and abdominal organs by shaking, percussing, and kneading the abdomen. The hot half bath is especially useful in congestive headaches connected with painful and scanty menstruation, or headaches due to ovarian irritation. In such cases it should be used cautiously at first. Temperature, 100° to 110°F.

Affusion

This consists simply in pouring water over the body of the patient, who may be sitting or standing in a bath-tub. It is a very efficient bath for reducing unnatural heat. It is a sovereign remedy for sun-stroke, hysteria, and sometimes for delirium when applied at the proper temperature. For headaches, it

is useful as a tonic remedy, and in improving the general health. Starting warm, 95°F., and decreasing to 85°F., then to 75°F., the affusion is tonic. In case of delicate patients the water should not be below 85°F.

Shower Bath

This bath is simply an imitation of rain. Water is allowed to fall upon the body after being divided into a number of streams by passing through a vessel with a perforated bottom. Its effects depend upon the size of the streams and the height from which they fall, together with the temperature of the bath and its duration. Although formerly much employed in water-cure establishments, this bath is now less used, especially the cold shower, because its place is supplied by other more convenient ones which produce the same results, as the spray and douche. The best manner of administering it is to commence the application with tepid water, and gradually cool it. The temperature may range from 95° to 70°F. The water should not usually be allowed to fall upon the head, but should be received first upon the hands and arms, then upon the feet and limbs, and afterward upon the back and shoulders, the body being well rubbed during the application.

Every family possesses in the ordinary colander a means of administering an efficient shower bath, by

holding it above the patient and pouring in water of proper temperature from a pitcher.

None but the most vigorous can enjoy the bath at a lower temperature than 70°F. and no advantage is gained by its employment at a lower temperature than that, while considerable harm may be done in many cases. The shower bath, like the affusion, is a tonic to improve the general health and so cure the headaches associated with debilitated conditions. Begin the bath with a temperature of 95° and gradually reduce it to 80° or even 70°F. if a patient is not weak.

The Vapor Bath

As a remedial agent, water in the form of warm or hot vapor is scarcely less useful than in its ordinary form. The vapor bath can be readily and successfully administered with such conveniences as every family possesses. Place the patient in a cane-seat chair, having first taken the precaution to spread over the seat a dry towel. Surround the patient and the chair first with a woolen blanket, and then with two or three thick comfortables, drawing the blankets close around the neck, and allowing them to trail upon the floor so as to exclude the air as perfectly as possible. Now place under the chair a large pan or pail containing two or three quarts of boiling water. Let the blankets fall quickly, so as to retain the rising

vapor. After a minute or two, raise the blankets a little at one side and exchange the pail for another with hot water, dropping the blankets again as soon as possible to avoid the admission of cold air. So continue until the patient perspires freely. The amount of perspiration must be judged by the face and forehead, as much of the moisture on the skin beneath the blankets is condensed steam.

Should the bath become at any time too hot, a little air may be admitted by raising the bottom of the blankets a little, being careful to avoid chilling the patient in so doing. The bath should not be continued more than twenty minutes, and ten to fifteen minutes will usually accomplish all that is desired by the bath. If too long continued, it induces faintness. A too high temperature will be indicated by a strongly increased pulse, throbbing of the temples, flushed face, and headache. The head should be kept cool by a compress wet in cool water and often changed. The temperature of the bath should be from 100° to 115°F. Unpleasant effects are sometimes produced at 120°F.

After this bath apply the tepid spray, or full bath. The patient should not be allowed to become chilly by exposure to cool air before the application of the spray, or other bath, which should be followed by vigorous rubbing.

For "breaking up a cold," "breaking chills," re-



lieving rheumatism, or soreness of the muscles from overexertion, for relaxing stiffened joints, and in eliminating poisons, this is a valuable agent. It may also be used to advantage in chronic diseases in which there is inactivity of the skin, liver or kidneys, as it is a powerful diaphoretic; but great care must be exercised to avoid excessive use, as too frequent repetitions of the bath produce debility. This bath is useful in sick headache, or congestive headache, but it must always be of short duration or the headache may be increased. *Apply cold to the head.*

Sitz Bath

This is a milder application than the hot-air bath, unless employed at a high temperature, 108°F. or more, when it becomes more severe. The sitz bath is also known as the hip bath.

For this bath, a common tub may be used, by placing a support under one edge to elevate it two or three inches; but it is better to use a tub made for the purpose, which should have the back raised eight or ten inches higher than the front to support the back, the sides sloping gradually so as to support the arms of the bather. The bottom should be elevated two or three inches. The depth in front should be about the same as that of a common wash-tub.

Enough water is required to cover the hips and extend a little way up the abdomen; four to six gallons

will suffice. The temperature suited to the needs of the patient may be employed. The duration of the bath will also vary according to circumstances. A short cool bath is tonic in its effect, like all short cool applications; a more prolonged one is a powerful sedative. The hot sitz is very exciting in its effect, if long continued. The warm bath is relaxing. The hips and trunk should be well rubbed during the bath by the patient or an attendant. The bather should be covered with a sheet or blanket during the bath. If sweating is desirable, use several blankets.

The sitz bath should seldom be taken either very hot or extremely cold. A very good plan for administering it, and one which will be applicable to most cases, is this: Begin the bath at 92° or 93°F. If the thermometer is not at hand, pour into the bath-tub three gallons of fresh, cool water, and then add one gallon of boiling water. This will give the desired temperature. After the patient has been in the bath ten minutes, cool it down to 85° F., which may be done by adding a gallon of cool water. Continue the bath five minutes longer, then administer a pail douche or spray, at about 85°F., and wipe dry.

The sitz bath is useful for chronic congestions of the abdominal and pelvic viscera and in treating many uterine and other diseases peculiar to women, it is an indispensable remedy. It is very valuable in

various nervous affections, especially those which involve the brain, as cerebral congestion and hyperemia with the associated headaches.

There is no better remedy for a cold than a very warm sitz bath taken while fasting, and just before retiring. It should be continued until gentle perspiration is induced.

The sitz may be converted into a general bath by rubbing the whole body with the wet hand while in the bath, and may thus be made to answer the purposes of the half bath.

Leg Bath

For this bath, a vessel deep enough to receive the limbs to the middle of the thighs is required. The bath may be taken at any desired temperature. It is a powerfully derivative bath, and is found very useful to prevent wakefulness in nervous persons, and to relieve palpitation of the heart, headache, and cerebral congestion. It is of great service in the treatment of epileptic patients. It is especially applicable for swollen knees and ankles. It gives much relief in gout. It is very useful in all forms of headache except anemic headache. The temperature should be 95° increased to 110°F. for ten minutes; cool off at 70°F. for two minutes.

Enemas

Fecal accumulations in the lower bowel are more

quickly and easily removed by an enema of warm water than by any purgative, laxative, or cathartic ever discovered or invented; and the use of this remedy is never accompanied by the unpleasant and painful griping and tenesmus which often accompany the use of cathartics. The administration is a trifle more troublesome, but the results are enough superior to more than repay the inconvenience. The syphon syringe is far preferable to any other for administering injections. Water about blood-warm should be used when the purpose is to relieve constipation, and a considerable quantity — one to three pints, or more — may be used. The water should be retained for a few minutes, while the bowels are kneaded and shaken. If there is difficulty in retaining the water, a folded napkin should be pressed against the anus.

The enema is a most valuable substitute for purgatives in general. Cases are very rare in which a cathartic drug will be found necessary if the enema is properly used. But the warm enema may become a source of mischief if its use is continued for some time. It is preferable to use water at a temperature of 80°F. or less, gradually diminishing the temperature. Cool or cold water acts as a tonic to the bowels and leaves no ill effects. The daily and frequent use of the enema has its objections and should not be used for any great length of time

except by the advice of a physician. In all congestive and toxic headaches, a warm enema should be taken at the beginning of the treatment, and then whatever bath is decided upon follows the enema.

Compresses

The compress is a wet cloth or bandage applied to a part. When the part is to be cooled, a compress composed of several folds should be wet in cool, cold, or iced water, as required, and placed upon the part after being wrung so it will not drip. It should be changed as often as *every five minutes*. This is often neglected, to the injury of the patient. A very cold compress may be prepared by placing snow or pounded ice between the folds of the compress. This will not need renewal so frequently; but its effects may be carefully watched, as injury may be done by neglect. In applying cold to such delicate parts as the eye, a very thin compress is better. It should be renewed once in five minutes, at least.

When moist warmth is required, a thick compress is applied, being wrung out of tepid water, and covered with a dry cloth to exclude the air. Soft, dry flannel is an excellent covering. Rubber or oiled silk may be employed when the compress is not to be retained more than a few hours; but if it is to be worn continuously, they will be injurious, as they are impervious to air and thus interfere with the function

of the skin. The effects of a compress thus applied are identical with those of the poultice, and the application is a much more cleanly one.

Compresses are applicable in all cases in which poultices are commonly used. They may replace the old-fashioned plasters with profit and comfort to the wearer.

Wet head cap is a compress made to fit the head. It should consist of several thicknesses of cotton or linen cloth, so as to retain moisture for some time. It is a good temporary application in diseases of the scalp, and for headache; but it should never be worn continuously for the purpose of relieving congestion, as it will have an effect just the opposite of that desired.

Fomentations

The fomentation is a local application. It consists in the application of a cloth wet in hot water. It may be considered as a hot compress. Fold a soft *flannel* cloth twice, so that it will be of three or four thicknesses. Lay it in a basin, pour boiling water upon it, and wring it dry by folding it in a dry towel. Or, if only one end of the cloth is wet, it may be wrung by folding the dry portion outside of the wet; in wringing, the whole will become equally wet. Apply it to the patient as hot as it can be borne. The second application can usually be made much hotter than the first. Frequently dipping the hands in cold

water will enable the attendant to wring the cloth much hotter than he would otherwise be able to do.

A better way is to fold the flannel as it is to be applied, and then dip in very hot water, lifting it out by the corner and placing it in the middle of a towel. Roll up quickly lengthwise of the towel, and wring nearly as dry as possible by twisting the ends of the towel. In this way, the fomentation can be wrung out much hotter than with the hands. Of course, it will be too hot to apply to the bare flesh; but do not waste heat by letting it cool. Protect the skin by one or more thicknesses of flannel and apply at once, covering with another dry flannel. The fomentation will gradually warm through, and will retain its heat two or three times as long as when applied in the ordinary way.

A still more convenient way is to heat the cloths in a steamer; by this means, they are made as hot as boiling water, and yet they are more easily handled, not being saturated with water. When no hot water is at hand, a fomentation may, in an emergency, be quickly prepared by wetting the flannel in cool water, wringing it as dry as desired, folding it between leaves of a newspaper, and laying it upon the top of the stove, or holding it smoothly against the side. The paper prevents the cloth from becoming soiled, the water protects the paper from burning, and the steam generated quickly, heats the cloth to boiling heat.

For a long fomentation, the heat may be made continuous by applying a bag of hot meal, salt, or sand, a hot brick or bottle, or, best of all, a rubber bag filled with water may be used — covered with a moist flannel.

The hot cloths should be re-applied once in five minutes. Two cloths should be employed, so that the second one may be applied the moment the first is removed. To retain the heat, a dry flannel, rubber, or oil-cloth should be placed over the fomentation. The application may be continued from ten minutes to half an hour, or longer in special cases. This appliance is very powerful, and should not be employed to excess.

Alternate hot and cold fomentations are frequently more efficient than the continuous fomentation. Hot applications should be generally followed by a cool or tepid compress for four or five minutes, or the part should be rubbed with the hand dipped in cool water until the redness produced by the fomentation in part disappears. In neuralgia, gout, and chronic rheumatism, in which the cooling has a tendency to cause a return of the pain, the parts should be covered by dry, warm flannels and so protected from the air. By this means, the good effect of the application may be prolonged.

When applied to the head for some time without intermission, it will often occasion faintness; hence, a

cooler application should be made after the use of the hot cloths for fifteen or twenty minutes.

If the applications must be continued for a long time, it is well in most cases to apply them at a temperature slightly lower than when they are to be used for only a few minutes.

The uses of the fomentation are very numerous. It is indicated whenever there is local pain without excessive heat or evidence of acute inflammation. Local congestions, neuralgia, toothache, pleurisy, and most local pains, vanish beneath its influence as if by magic. For indigestion, colic, constipation, torpid liver, dysmenorrhea, and rheumatic pains, it is a remedy of great power, and is used with almost uniform success. In relieving sick-headache and neuralgic headache by application to the head, neck, and stomach, its efficiency is unrivaled.

Applications of Ice

Ice may be applied directly to the skin, or, as is usually better, it may be inclosed in flannel; when dry cold is needed, put cracked ice in a rubber pad. The ice-cap is a double head-cap of rubber, filled with pounded ice.

The application of ice is found extremely serviceable in many inflammatory diseases, and in some nervous affections. In inflammation of the brain, the ice-cap is of inestimable value.

Water Emetic

Warm water at about 92°F.— not hot water — is a most excellent emetic if taken in sufficient quantity. It is prompt in action, and is unaccompanied by the painful nausea, retching, and straining produced by most other emetics. From half a pint to a quart is required to produce emesis. The patient should slowly swallow a tumblerful, then, after two or three minutes, swallow another, so continuing to drink until three or four glasses have been taken. As soon as the slightest disposition to vomit is felt — or even if it is not felt, after a considerable quantity of water has been taken — the patient should touch the back part of his mouth with the end of his finger or a feather, as far down as he can reach. This will usually excite the desired action. If it does not, all that need be done is to continue drinking. A little salt added to the water will make it more sickening, and will do no particular harm, as it is thrown out again.

It is not claimed that the warm water emetic can replace all other emetics in *all cases*. When instant vomiting is necessary, as in cases of poisoning, some more prompt emetic may be used with it. But for all ordinary purposes, such as emptying the stomach in bilious headache attacks, it clearly has no rival.

CHAPTER XII

General Rules for Health

In the preceding chapters the rules for healthful living have already been outlined, but for the sake of emphasis, they are called to the reader's attention in this place.

It is obvious that anything which improves the general health, will help to cure chronic headaches — the headache habit. The headaches that come from acute illness do not belong in this class. And yet, the man who lives a biologic life will escape acute illnesses which find a vulnerable spot in a man of careless, unhygienic habits. The younger one is when he begins to live correctly, the better are his chances for perfect health. That is what all the "better baby" campaigns and the eugenic movement are for — to get health early in life, and to begin training this generation so that posterity will have the benefit of a robust, clean ancestry.

Headaches, and nine-tenths of all aches, can be avoided by simple living.

A great deal of talk about the simple life has made

a seemingly complex thing of it — a bugbear. All one needs to do is to *begin* living in a rational way, and to *continue* so living.

Fresh Air

People can live and thrive on a surprisingly small amount of food, if it is the right kind; but fresh air, sunshine, and pure water are needed in large amounts.

Fresh air day and night — all the time — is a health necessity. The practice of “sleeping out” is especially needful for people whose work keeps them indoors for hours, with merely window ventilation, and the fresh air supply shared with many others. Resting, working, and exercising in the open air is very much better than resting, working, and exercising indoors, even under the best of conditions.

Exercise is an important health factor. Bodily indolence generates poisons in mind and body.

Walking is recommended as one of the best of all exercises, but individual conditions are so varied that each one must decide for himself what form his exercises shall take. *But outdoors let it be.*

For women, the good, old-fashioned “movement cure” connected with housework, is worthy of a larger following in these days of machine-worked homes. The work should be done in rooms where pure air freely circulates. Then there is gardening.

Even a window-box garden is a diverting exercise; one can practise deep breathing while tending the flowers!

Sleep

It is impossible to regulate, or to definitely prescribe, the number of hours one should sleep, because individual cases and needs differ so widely. *Get sufficient sleep.* Eight hours is probably the average requirement, and it would better be at night. "Early to bed and early to rise" is a good health rule.

Sunshine

Of course we must have sunshine. The value of sunshine to animal and plant life is apparent to all. Plants become blanched and tender, and lack hardihood, if left without sunlight. So it is with children. Men growing up in mines, or confined in prison cells, or sunless workshops, are sallow and ill formed. Factory and sweatshop women are listless and anemic.

Get all the sunshine you can. One must be sensible in very hot weather, of course, and the head should always be protected from the sun's rays. A sun bath in your own room is a great thing for health. After your bath, sit in a flood of sunshine for ten minutes before dressing, and slowly sip a pint of moderately cool water. This is a real tonic treatment.

Pure Water

As has been said, people do not drink sufficient water. Six to eight glasses daily, and more in hot weather, is the proper amounts for adults. Water drinking at meal times is not advised. If one is very thirsty, a cup, or glass, of water with the meals will do no harm. Pure fruit juices are healthful as beverage and food, but soda-fountain products, taken at all hours, cannot be included in the healthful dietary.

Dietary

The more closely one follows a correct dietary, the better health he is bound to have, with freedom from headaches and all other distressing symptoms. What that correct dietary is, depends upon one's height, weight, occupation and general health. The proportion of food elements, and the amount needed from time to time, must be worked out by following the suggestions in Chapters IX and X. It is not difficult to balance one's ration. Avoid all excess of meat eating, and substitute the wholesome vegetables and cereals.

Keep the Body in Repair

Just as the owner of a valuable machine keeps it in repair, so it is necessary to keep the teeth, eyes, ears and nose in excellent working condition by consulting

specialists who understand how to repair these much abused and often diseased organs. Do not neglect these important parts of your human machine. Severe headaches are associated with special sense disorders.

Clothing

The individual must decide for himself what clothes are suitable for the climate, his work, and the circumstances of his social position. A few things are absolutely essential. The body must be properly protected, the clothing must be comfortable, clean, and in no way should it hamper the movements of the body, or restrict its normal functions.

The Calls of Nature

Constipation is the bane of the average civilized person — young or old. A laxative diet, exercise, and general healthful living will prevent, and cure, this condition. It is fostered all through life by the disregard, for various reasons, of Nature's calls. Disorders of the kidneys and bladder are brought about by the same disregard of Nature. A great effort should be made immediately to respond to the demands of the excretory organs, or train them to move at regular, convenient times, and then one should always answer the call.

At school, at work, or wherever and whenever the

bowels and bladder cannot conveniently receive attention, it is customary to disregard the body's needs. The result is, that the calls of Nature are less and less regular and insistent, and constipation with its train of evils is the final outcome.

The congestive headache of autointoxication is caused by constipation.

Eat laxative foods and obey Nature's calls.

Do not Worry

A happy and contented mind ranks with sunshine and fresh air, as a health measure. Take things as they come. If, by reasonable planning and effort, uncomfortable situations can be side-stepped, so much the better. But if it is a case of something that cannot be cured, then endure it without worrying. Above all things, do not waste time, strength, and health in worrying about the future.

Be such a thorough-going optimist that there is not a single dark, gloomy corner in your mind. The world is full of beauty, content, and health. Why not enjoy your share?

A Last Word

The writer feels sure from his years of experience in dealing with all sorts of headache sufferers, that at least five-sixths of the cases are preventable, and curable, by following the suggested diet, and the rules

of hygienic living and treatment briefly outlined in this little book.

That so many people have found happiness with health by so doing, is the writer's reason for prescribing it for you.

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